SAF-B03-015 Remaining Sites Confirmation Sampling-Soil FINAL DATA PACKAGE

E:IVIA	UL KESULIS IU:		
	Ella Feist		N/A INITIAL/DATE
	Mike Stankovich		N/A INITIAL/DATE
MAII	COMPLETE COPY	OF DATA PA	ACKAGE TO:
	Ella Feist	H9-01	INITIAL/DATE
	Mike Stankovich	H9-02	INITIALDATE 6/4/03
	Bob Hynes	Н0-18	INITIALDATE
	Jeanette Duncan	H9-02	INITIAL/DATE
COM SHEE	•	SAF-B0	

Sample Location/Waste Site: 600-181





2 June 2003

Joan Kessner Bechtel-Hanford, Inc. 3190 Washington Way MSIN H9-03 Richland, WA 99352

Subject: Contract No. 630

Analytical Data Package

Dear Ms. Kessner:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

SDG # H2224 SAF # B03-015 Date Received 5-17-03 # Samples 4 Matrix Soil Volatiles Semivolatiles X Pest/PCB X DRO/KRO/GRO GC Alcohols Herbicides X Metals X Inorganics X	LvLl Batch #	0305L450
Date Received 5-17-03 # Samples 4 Matrix Soil Volatiles Semivolatiles X Pest/PCB X DRO/KRO/GRO GC Alcohols Herbicides X Metals X	SDG #	H2224
# Samples 4 Matrix Soil Volatiles Semivolatiles X Pest/PCB X DRO/KRO/GRO GC Alcohols Herbicides X Metals X	SAF#	B03-015
Matrix Soil Volatiles Semivolatiles X Pest/PCB X DRO/KRO/GRO GC Alcohols Herbicides X Metals X	Date Received	5-17 - 03
Volatiles Semivolatiles X Pest/PCB X DRO/KRO/GRO GC Alcohols Herbicides X Metals X	# Samples	4
Semivolatiles X Pest/PCB X DRO/KRO/GRO GC Alcohols Herbicides X Metals X	Matrix	Soil
Pest/PCB X DRO/KRO/GRO GC Alcohols Herbicides X Metals X	Volatiles	
DRO/KRO/GRO GC Alcohols Herbicides X Metals X	Semivolatiles	X
GC Alcohols Herbicides X Metals X	Pest/PCB	X
Herbicides X Metals X	DRO/KRO/GRO	
Metals X	GC Alcohols	
	Herbicides	X
Inorganics X	Metals	Χ
	Inorganics	X

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,

Lionville Labøratory Incorporated

Orlette S. Johnson Project Manager

r:\group\pm\orlette\tnu-hanford\data\b_ltrs.doc





Lionville Laboratory, Inc. BNA ANALYTICAL DATA PACKAGE FOR TNUHANFORD B03-015 H2224

DATE RECEIVED: 05/17/03

LVL LOT # :0305L450

CLIENT ID	LVL	# MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
						
J00NP0	001	s	03LE0624	05/14/03	05/23/03	05/26/03
J00NN7	002	S	03LE0624	05/14/03	05/23/03	05/27/03
J00NN8	003	s	03LE0624	05/14/03	05/23/03	05/27/03
J00NN9	004	S	03LE0624	05/15/03	05/23/03	05/26/03
J00NN9	004	MS S	03LE0624	05/15/03	05/23/03	05/26/03
J00NN9	004	MSD S	03LE0624	05/15/03	05/23/03	05/27/03
LAB QC:						
SBLKUB SBLKUB	MB1 MB1	S BS S	03LE0624 03LE0624	N/A N/A	05/23/03 05/23/03	05/25/03 05/25/03



Client: TNU-HANFORD B03-015

LVL#: 0305L450

SDG/SAF # H2224/B03-015

W.O. #: 11343-606-001-9999-00 **Date Received:** 05-17-2003

SEMIVOLATILE

Four (4) soil samples were collected on 05-14,15-2003.

The samples and their associated QC samples were extracted according to Lionville Laboratory OPs based on method 3550 on 05-23-2003 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 05-25,26,27-2003.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from samples that met LvLI's sample acceptance
- 2. Samples were extracted and analyzed within required holding time.
- 3. Non-target compounds were detected in the samples.
- Most samples required 2 to 20-fold dilution due to the nature of the sample matrix. The summary 4. form does not reflect the correct dilution factor due to programming limitations. A copy of the Sample Extraction Record has been enclosed.
- All surrogate recoveries were within EPA OC limits. 5.
- 6. All matrix spike recoveries were within EPA QC limits.
- 7. All blank spike recoveries were within EPA QC limits.
- The method blank contained the common laboratory contaminants Di-n-butylphthalate and Bis (2-8. Ethylhexyl) phthalate at levels less than the CRQL.
- Internal standard area and retention time criteria were met. 9.
- 10. Manual integrations are performed according to OP 21-06A-125 to produce quality data with the All manual integrations are required to be technically valid and properly utmost integrity. documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
- 11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

J. Michael Taylor

Lionville Laboratory Incorporated

som\gorup\data\bna\tru-hanford-0305-450.doc
The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 2 5 pages.

GLOSSARY

DATA QUALIFIERS

U	=	Compound was analyzed for but not detected. The associated numerical value is the estimated
		sample quantitation limit which is included and corrected for dilution and percent moisture.

- J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 31.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I = Interference.
- NQ = Result qualitatively confirmed but not able to quantify.
- A = Indicates that a TIC is a suspected aldol-condensation product.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.



3

GLOSSARY

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Suffix added to sample number to indicate that results are from a diluted analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP, Z = Indicates Spiked Compound.



4

TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP Missed Peak: manually added peak not found by automatic quan program.
- PA Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.



5

Lionville Laboratory, Inc.

TNUHANFORD B03-015 H2224

Client.

RFW Batch Number: 0305L450

*= Outside of EPA CLP QC limits.

Semivolatiles by GC/MS, HSL List

Report Date: 05/28/03 15:36

Page: la

Work Order: 11343606001

TOONNS J00NN9 J00NN9 JOONN9 JOONN7 JOONPO Cust ID: 002 003 004 004 MS 004 MSD 001 RFW#: Sample SOIL SOIL SOIL SOIL Information Matrix: SOIL SOIL 2.00 1.00 40.0 20.0 2.00 2.00 D.F.: ug/Kg ug/Kg uq/Kq uq/Kg ug/Kg Units: uq/Kq 왐 જ 69 왕 85 ş 왗 70 84 81 왕 69 Nitrobenzene-d5 왗 67 옿 82 왕 ò 79 % 82 2-Fluorobiphenyl 74 왕 80 Surrogate 왕 90 옿 108 ş જ 103 ջ 99 왕 107 Terphenyl-d14 96 Recovery 72 % 85 왕 70 ş. 82 왕 Phenol-d5 75 왛 69 욹 ٩ 9ૂ 앟 ջ 75 85 70 84 74 2-Fluorophenol 72 78 ş 67 왕 કૃ 52 84 2,4,6-Tribromophenol 73 48 왂 14000 760 U 70 왕 웋 IJ 28000 U 81 330 Phenol U IJ 28000 U 14000 U 760 U 760 760 IJ 330 bis(2-Chloroethyl)ether 2-Chlorophenol_____ 14000 760 П 68 ş 79 앛 330 U 28000 U TT 1,3-Dichlorobenzene____ Ħ 28000 U 14000 U 760 U 760 U 760 IJ 330 1.4-Dichlorobenzene_____ 330 IJ 28000 U 14000 IJ 760 TŦ 66 돳 79 % 1.2-Dichlorobenzene Ħ 330 IJ 28000 U 14000 П 760 П 760 760 U. 14000 2-Methylphenol 330 П 28000 U П 760 TT 760 TT 760 П 2,2'-oxybis(1-Chloropropane) 330 U 28000 U 14000 U 760 U 760 U 760 IJ 3- and/or 4-Methylphenol____ 330 U 28000 U 14000 IJ 760 П 760 Ħ 760 IJ N-Nitroso-di-n-propylamine 330 Ħ 28000 IJ 14000 Ħ 68 Ħ 760 옷 81 ્ર Hexachloroethane____ 330 Ħ 28000 U 14000 П 760 U 760 U 760 IJ Nitrobenzene_____ 330 U 28000 U 14000 U 760 U 760 IJ 760 U Isophorone _____ 330 IJ 28000 U 14000 760 U U 760 IJ 760 U 2-Nitrophenol____ 330 U 28000 U 14000 U 760 IJ 760 IJ 760 IJ 2,4-Dimethylphenol_____ 330 П 28000 U 14000 760 IJ 760 IJ 760 U bis(2-Chloroethoxy)methane____ Ħ 330 28000 U 14000 760 ΤŢ 760 П 760 IJ 2,4-Dichlorophenol____ 330 13 28000 U 14000 IJ 760 TT 760 ťΙ 760 Ħ 1,2,4-Trichlorobenzene 330 U 28000 Ū 14000 U 760 IJ 66 ş 79 કૃ Naphthalene 330 T 28000 U 14000 U 760 Ħ 760 IJ 760 U 4-Chloroaniline 330 IJ 28000 U 14000 U 760 U 760 IJ 760 U Hexachlorobutadiene_____ 330 U 28000 14000 760 [] 760 U 760 IJ 760 74 옿 85 U 14000 U IJ ջ 4-Chloro-3-methylphenol 330 U 28000 760 IJ 760 IJ 760 U 2-Methylnaphthalene_____ П 28000 IJ 14000 U 330 Hexachlorocyclopentadiene 330 IJ 28000 U 14000 U 760 IJ 760 П 760 U 2,4,6-Trichlorophenol IJ 28000 U 14000 Ü 760 IJ 760 U 760 U 330 2,4,5-Trichlorophenol ____ 840 U 70000 U 35000 U 1900 U 1900 U 1900 U

RFW Batch Number: 0305L450	Client: 7	NUHAN	FORD B03-	015	H2224	Work (<u> Order: 113</u>	<u>343606</u>	5001	<u>I</u>	<u> Page: 1b</u>	
Cust ID:	JOONPO		J00NN7		J00NN8		J00NN9		J00NN9		J00MN9	
RFW#:	001		002		003		004		004 MS		004 MSD	•
2-Chloronaphthalene	330	U	28000	U	14000	U	760	U	760	U	760	U
		Ü		U	35000	Ū	1900	U	1900	U	1900	Ü
2-Nitroaniline		Ū		U	14000	Ū	760	U	760	U	760	IJ
Accepanhe by long	330	U		Ü	14000	Ū	760	Ū	760	Ū	760	U
Acenaphthylene2,6-Dinitrotoluene		Ü		Ü	14000	Ū	760	Ü	760	Ū	760	Ü
3-Nitroaniline	840	Ü		Ü	35000	Ū	1900	Ū	1900	U	1900	U
		U		ซ	14000	Ü	760	U	72	૪	84	8
Acenaphthene2,4-Dinitrophenol		Ü	70000	Ū	35000	บ	1900	Ū	1900	Ü	1900	U
4-Nitrophenol	840	Ū	70000	Ū	35000	Ū	1900	Ū	64	8	76	%
Dibenzofuran	330	U	28000	Ū	14000	Ü	760	Ū	760	Ū	760	Ü
2,4-Dinitrotoluene	330	Ū	28000	Ū	14000	Ū	760	Ū	71	8	85	ş
Diethylphthalate	330	Ū	28000	Ü	14000	Ü	760	Ü	760	Ū	760	Ü
4-Chlorophenyl-phenylether	330	บ	28000	Ü	14000	Ū	760	Ü	760	Ü	760	Ū
		Ü	28000	Ū	14000	Ū	760	Ū	760	Ū	760	Ū
Fluorene4-Nitroaniline		บ	70000	Ü	35000	Ü	1900	U	1900	U	1900	U
4,6-Dinitro-2-methylphenol	840	บ	70000	Ü	35000	Ū	1900	Ū	1900	Ū	1900	
N-Nitrosodiphenylamine (1)	330	Ü	28000	Ū	14000	Ū	760	Ū	760	U	760	
4-Bromophenyl-phenylether	330	U	28000	Ū	14000	Ŭ	760	U	760	U	760	U
Hexachlorobenzene	330	U	28000	U	14000	Ū	760	บ	760	U	760	U
Pentachlorophenol	840	Ū	70000	U	35000	U	1900	U	57	8	69	%
Phenanthrene	330	U	2500	J	14000	บ	760	U	760	U	760	Ü
Anthracene	330	Ū	28000	Ū	14000	Ų	760	U	760	U	760	Ü
Carbazole	330	U	28000	U	14000	U	760	U	760	U	760	U
Di-n-butylphthalate	68	JВ	28000	U	14000	U	760	Ū	760	U	760	U
Fluoranthene		Ü	28000	U	14000	U	760	Ų	760	U	760	Ū
Pyrene		U	28000	U	14000	U	760	U	89	と	105	%
Butylbenzylphthalate	330	Ŭ	28000	U	14000	U	760	U	760	U	760	U
3,3'-Dichlorobenzidine	330	U	28000	U	14000	U	760	ប	760	U	760	U
Benzo(a)anthracene	330	Ū	28000	U	14000	U	760	U	760	Ų	760	
Chrysene	330	U	28000	U	14000	U	760	U	760	U	760	
bis(2-Ethylhexyl)phthalate	100	JВ	28000	U	14000	U	47	JВ	760	Ų	760	U
Di-n-octyl phthalate	330	Ü	28000	U	14000	U	760	U	760	U	760	Ū
Benzo(b)fluoranthene	330	U	28000	U	14000	U	760	U	760	U	760	
Benzo(k) fluoranthene	330	U	28000	U	14000	U	760	U	760	U	760	U
Benzo(a)pyrene		U	28000	Ū	14000	U	760	U	760	U	760	U
Indeno(1,2,3-cd)pyrene	330	Ü	28000	U	14000	U	760	U	760	U	760	U (
Dibenz(a,h)anthracene	-		28000	U	14000	U	760	U	760	U	760) U
Benzo(g,h,i)perylene	330		28000	U	14000	U	760	U	760	U	760	U
(1) - Cannot be separated from Di					EPA CLP QC	limi	ts.					

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 05/28/03 15:3 Client: TNUHANFORD B03-015 H2224 Work Order: 11343606001 Page: 2a RFW Batch Number: 0305L450

	Cust ID:	SBLKUB		SBLKUB BS	
Sample	D FW∰ •	03LE0624-M	MB 1	03LE0624-N	Æ1
Information	Matrix:		101	SOIL	٠.
TITOTHACTOR	D.F.:		າດ	1.0	0.0
	Units:			ug/l	
	0202.	-3/-	-5	-5, -	
	Nitrobenzene-d5	75	8	74	8
Surrogate	2-Fluorobiphenyl	70	%	69	%
Recovery	Terphenyl-d14	94	૪	89	ૄ
_	Phenol-d5	69	કૃ	67	8
	2-Fluorophenol	68	ક	68	ò
	2,4,6-Tribromophenol	74	જ	72	%
=======================================			== f]	l=======	==f]
Phenol		330	U	66	8
	ethyl)ether		U	330	U
			U	66	윻
	benzene		Ū	330	U
1,4-Dichloro	benzene	330	U	68	8
	benzene		U	330	U
2-Methylphen		330	U	330	Ŭ
	(1-Chloropropane)				U
	Methylphenol		U	330	U
	n-propylamine		U	71	8
Hexachloroet	hane	330	U	330	U
Nitrobenzene		330	U	330	Ų
Isophorone		330	U	330	U
2-Nitropheno	01	330	U	330	Ü
2,4-Dimethyl	phenol	, 330	U	330	Ū
bis(2-Chloro	oethoxy)methane	330	U	330	U
	ophenol		U	330	U
	lorobenzene				ક
			Ü	330	Ų
4-Chloroanil	line	330	U	330	U
	ıtadiene		U	330	Ü
	methylphenol		U	72	8
2-Methylnaph	nthalene	330	U	330	U
Hexachlorocy	/clopentadiene	330	U	330	U
2,4,6-Trichl	lorophenol	330	U	330	U
2,4,5-Trichl		840	U	840	U
		_			

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0305L450 Client: TNUHANFORD B03-015 H2224 Work Order: 11343606001 Page: 2b

Cust ID: SBLKUB

SBLKUB BS

RFW#: 03LE0624-MB1 03LE0624-MB1

2-Chloronaphthalene	330 U	330 U		
2-Nitroaniline	840 U	840 U		
Dimethylphthalate	330 U	330 U		
Acenaphthylene		330 U		
2,6-Dinitrotoluene	330 U	330 U		
3-Nitroaniline		840 U		
Acenaphthene		73 %		
2,4-Dinitrophenol	840 U	840 U		
4-Nitrophenol		60 %		
Dibenzofuran		330 U		
2,4-Dinitrotoluene	330 U	83 %		
Diethylphthalate	330 U	330 U		
4-Chlorophenyl-phenylether	330 U	330 U		
Fluorene	330 U	330 U		
4-Nitroaniline	840 U	840 U		
4,6-Dinitro-2-methylphenol		840 U		
N-Nitrosodiphenylamine (1)		330 U		
4-Bromophenyl-phenylether	330 U	330 U		
Hexachlorobenzene	330 U	330 U		
Pentachlorophenol	840 U	47 %		
Phenanthrene	330 U	330 U		
Anthracene	330 U	330 U		
Carbazole	330 U	330 U		
Di-n-butylphthalate	31 J	330 U		
Fluoranthene	330 U	330 U		
Pyrene	330 U	81 %		
Butylbenzylphthalate	330 U	330 U		
3,3'-Dichioropenzidine	330 U	330 U		
Benzo(a)anthracene	330 U	330 U		
Chrysene	330 U	330 U		
bis(2-Ethylhexyl)phthalate	21 J	330 U		
Di-n-octyl phthalate	330 U	330 U		
Benzo(b)fluoranthene	330 U	330 U		
Benzo(k) fluoranthene	330 U	330 U		
Benzo(a)pyrene	330 U	330 U		
Indeno(1,2,3-cd)pyrene	330 U	330 U		
Dibenz(a,h)anthracene		330 U		
Benzo(g,h,i)perylene	330 U	330 U		
(1) - Cannot be separated from D		Outside of EPA	CLP QC limits.	

1 F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

J00NP0			

5000 JAB

300| JB

200 J

CLIENT SAMPLE NO.

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B03-015 H2224

3.

4.

5.

Matrix: (soil/water) SOIL Lab Sample ID: 0305L450-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D052516

Level: (low/med) LOW Date Received: 05/17/03

% Moisture: ___0 decanted: (Y/N)__ Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/26/03

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Number TICs found: 5 PH: 7.0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

ALDOL CONDENSATE

UNKNOWN

UNKNOWN

5.382

6.695

21.154

112

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

	CLIENT	SAMPLE	NO.	
ı.			<u>.</u>	
١,	J00 NN 7			

Lab Name: <u>Lionville Labs, Inc.</u> Work Order: <u>11343606001</u>

Client: TNUHANFORD B03-015 H2224

Matrix: (soil/water) SOIL Lab Sample ID: 0305L450-002

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 0052617

Level: (low/med) \underline{LOW} Date Received: $\underline{05/17/03}$

% Moisture: 4 decanted: (Y/N) Date Extracted: 05/23/03

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/27/03

Injection Volume: 2.0 (uL) Dilution Factor: 40.0

GPC Cleanup: (Y/N) <u>N</u> pH: $\underline{7.0}$ CONCENTRATION UNITS:

Number TICs found: $\underline{5}$ (ug/L or ug/Kg) $\underline{ug/Kg}$

	1			
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=======================================		======		=== =
1.	16 - 36 MINUTES		<u> </u>	
2.	UNRESOLVED HYDROCARBONS			
3.	ALDOL CONDENSATE	5.199	10000	JAB
4.	ALKANE	17.832	20000	J
5.	ALKANE	18.806	10000	J
6.	ALKANE	19.640	100000	J
7.	ALKANE	20.953	10000	J
j	j			

CLIENT SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

	J00NN8		
i			

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B03-015 H2224

Matrix: (soil/water) SOIL Lab Sample ID: 0305L450-003

Sample wt/vol: 15.0 (g/mL) \underline{G} Lab File ID: $\underline{D052618}$

Level: (low/med) LOW Date Received: 05/17/03

% Moisture: $\underline{}$ decanted: (Y/N) Date Extracted: $\underline{05/23/03}$

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/27/03

Injection Volume: 2.0(uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) N pH: $\underline{7.0}$

CONCENTRATION UNITS:

Number TICs found: 3 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	16 - 36 MINUTES	į		
2.	UNRESOLVED HYDROCARBONS			
3.	ALDOL CONDENSATE	5.208	60000	JAB
4.	ALKANE	17.832	3000	J
5.	ALKANE	18.901	4000	J
				l

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

1		
JOONN9		

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B03-015 H2224

Matrix: (soil/water) SOIL Lab Sample ID: 0305L450-004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D052603

Level: (low/med) LOW Date Received: 05/17/03

% Moisture: ___12 decanted: (Y/N)__ Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/26/03

Injection Volume: 2.0(uL) Dilution Factor: 2.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 3 (ug/L or ug/Kg) ug/Kg

EST. CONC. | Q RTCAS NUMBER COMPOUND NAME UNKNOWN 3.952 2000 JB ALDOL CONDENSATE 5.257 10000 JAB | 2. 6.613 300| JB UNKNOWN 3.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

	CLIENT	SAMPLE	NO.	
	BLKUB	_		

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B03-015 H2224

Matrix: (soil/water) SOIL Lab Sample ID: 03LE0624-MB1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D052513

Level: (low/med) LOW Date Received: 05/23/03

% Moisture: ____ decanted: (Y/N)_ Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/25/03

Injection Volume: 2.0 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: $\underline{7.0}$

CONCENTRATION UNITS:
Number TICs found: 3 (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=======================================	======================================	======	_==========	=====
1.	UNKNOWN	4.014	100	J
2.	ALDOL CONDENSATE	5.353	5000	JA
3.	UNKNOWN	6.692	200	J

Test: 0625

S

Sheet no.: 1

Analyst:

Client: TNUHANFORD B03-015 H2222

Extract. Date: 05/23/03 Extraction Batch No: 03LE0624 Analyst: MF Method: SONC

Cleanup Date:

ract. Bate: 03/23/03

LIMS Report Date: 05/27/03 Solvent: DCM/ACETONE Adsorbent:

Sample	No:	Client Name			рН	Initial WT/VOL					Split Mult.	GPC Y/N	% Solids	C/D FACTOR
		 									•	. <u> </u>		
305L432		INUHANFORD	B03-015	H2222	_	30.0	1.0		1.0		0.5	N	100.00	16.7
	001	 JOONLO			7	30.0	1.0		2.0		0.5	N	89.34	37.3
	002	JOONK7			7 7	30.0	1.0	1.0	4.0		0.5	N	89.34	74.6
	002	JOONK7			7	30.0	1.0	1.0	2.0		0.5	N	89.34	37.3
	002	JOONK7			7	30.0	1.0	1.0	2.0		0.5	N	88.74	37.6
	003	JOONK8			7	30.0	1.0		1.0		0.5	N	94.63	17.6
22057424	007	JOONK9 TNUHANFORD	אכם כחם	บววาศ	,	30.0	1.0		1.0		0.5		303	27.00
)305L434		J00P13	503-024	NZZ10	7	30.0	1.0		1.0		0.5	N	99.91	16.7
	001	J00PT5			7	30.0	1.0		1.0		0.5	N	98.96	16.8
	002	JOONTS JOONTS			7	30.0	1.0		1.0		0.5	N	98.33	16.9
	003 004	JOONTO JOONT7			7	30.0	1.0		1.0		0.5	N	98.71	16.9
	004	J00NT7			7	30.0	1.0	1.0	1.0		0.5	N	98.71	16.9
	004				7	30.0	1.0				0.5	N	98.71	16.9
	005	JOONT8			7	30.0	1.0		1.0		0.5	N	98.46	16.9
	006	JOONT9			7	30.0	1.0		1.0		0.5	N	99.14	16.8
0305L449		TNUHANFORD	B03-017	H2225	•	30.0						-		
02020443	001	JOONL4	203 01.		7	10.0	1.0		1.0		0.5	N	99.25	50.4
0305L450		TNUHANFORD	B03-015	H2224	•	10.0								
02021420	001	JOONPO	203 013		7	30.0	1.0		1.0		0.5	N	99.98	16.7
	002	JOONN7			7	15.0	1.0		2.0		0.5	N	95.85	69.6
	003	JOONN8	÷		7	15.0	1.0		1.0		0.5	N	95.60	34.9
	004	JOONN9			7	30.0	1.0		1.0	1	0.5	N	87.88	19.0
	004				7	30.0	1.0		1.0		0.5	N	87.88	19.0

Comments:

Surrogate: 500 UL ESU BNA 89914005 @100-150 UG/ML Spike: 500 UL EMS BNA 89912203 @100-150 UG/ML

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
Concelled RI Plas	mb				

SAMPLE EXTRACTION RECORD

Sheet no.: 2

Extract. Date: 05/23/03

Extraction Batch No: 03LE0624

Analyst: MF

Method: SONC

Test: 0625

Cleanup Date:

Analyst:

Client: TNUHANFORD B03-015 H2222

LIMS Report Date: 05/27/03

Solvent: DCM/ACETONE

Adsorbent:

 Sample No:	Client Name Client I	•	-	Initial WT/VOL		-			_			C/D FACTOR
0305L450-	TNUHANFORD	B03-015 H2224		<u> </u>					· <u></u>			
004	HT JOONN9	•	7	30.0	1.0	1.0	1.0		0.5	N	87.88	19.0
03LE0624-MB1	H SBLKUB	•	7	30.0	1.0		1.0		0.5	N	100.00	16.7
03LE0624-MB1	HS SBLKUB	•	7	30.0	1.0	1.0	1.0		0.5	N	100.00	16.7

Comments:

Surrogate: 500 UL ESU BNA 89914005 @100-150 UG/ML Spike: 500 UL EMS BNA 89912203 @100-150 UG/ML

	for Transfer
concellal RI RESTALS	

Q

Lionville Laboratory	Use	Only
		

Custody Transfer Record/Lab Work Request Page 1 of ____

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6	CHONVILLE LABORATORY INC.

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030564	50		}		FIELD	PERSO	NNE	L: C	OMP	LET	TE C	DNL	SHAD	ED A	REA!	S [i					D			G	0.0	ONVILLE LA	BORATOR	Y INC.
Client	TA1//	1-1-0-1		B03 -0	15	-			Refr	igera	ntor #				2												}	4
Client Est. Final Pro									407				Liquid]				
Project #	j. Jaiii	(12 43	- 606	- 001-	9999	-05			#/19 	pe u	Contai	ner	Solid		iAh	IAG	1				(146	K		IAL				
Project Conta									Volu	ıme			Liquid				<u> </u>					 -						
Lionville Labo						05							Solid		120	250	 		<u> </u>		60			60				
ac spec		Del	510	TAT_		quit	=		Pres	Preservative			<u>. </u>		ORGANIC		l		├	 	INC	DRG	 					
Date Rec'd	5.	17-03	[Date Due _	<u></u> 5-	24-0)	>			ALYS DUES	SES STED		-	VOA	BNA	Pest/	Herb				Metal	8		F .				
MATRIX		1					Ma	trix								·	1		Lionv	ille La	borate	ory Us	se Onl	у	Ţ			
CODES: S - Soil SE - Sediment SO - Solid	Lab ID		Cile	nt ID/Descri	ption		Cho	osen /)	Mate	rix	Da Colle		Time Collected		Je 25 H	0608H	OHERY	0 Pc B .			MRURBTO			H.P.C			, ,	
SL - Sludge W - Water		Too	NPO				MS	MSD	5		5-11	(-a)	C {80	-	×	 -	 	 -			X	-	-					
O - Oil A - Air	001		N N 7	·			 	-	├ ~			1-07	0904	 	X	-		X	 	 	Χ		 	 			$\neg \dashv$	
DS - Drum Solids	 		3 M M C										1	-	×	 		X	$\uparrow -$	 	X		1	_				
DL - Drum Liquids	600 Y		Phys				-	-			5-15	(0-2	1300		*	X	X		 	\top	*			X				
L - EP/TCLP Leachate	0		- 10 10)				 	 	 	-	-				_	-												
Wi - Wipe	· -																											
F- Fish		1																										
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Special Instruct	tions:	SAG	= #	803-0	15			DATE.	/REVIS 2 - 0 1	SION	1s: . () (PcB	requi	101	Ç,	-04	0 2	-003	t -0	104			Lionv	ille Lab	oratory	Use O	nly	
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Relinquished by	4	Receiv by	ed	Date	Time	Re	linqui by			1	Rece by		_ c	ate	Tie	me			ies Bet abels a				Y	or N		OC Reci oon San	nple Re	ec't
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Lionville Labo	ratory	Use Only	Custo	ody T	rans	sfer	Re	ec	ord/	Lab	W	ork	Re	qı	ies	t Pag	је <u>1</u>	01	<u> </u>	-		31	\/	l I
030	<u>5 L4</u>	132		FIELD	PERSO	NNEL:	CO	MPLE	ETE ON	LY SHA	DED	AREA	s B		0		•	D	E		C	HO	VILLETA	BORATORYING
Client T	<u> </u>	Herroad	BO	3-015	<u> </u>		R	efriger	ator #			2									1		7	D
Est. Final Pro	oj. Sam	pling Date					_ #	/Type (Container	Liquid	_										,			#
Project Contr	act/Pho	73 43 - 606 one #					~ v	olume		Liquid		<u> </u>	اعو	1	lau			loq	104		lay		lae	
		y Project Manag				-40-		reserv	atives	Solid	┼-	120	<u>asb</u>	=	258			40 —	130	-	120		60	
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Date Rec'd	50	<u>1.03</u>	Date Due	5-	24-03			EQUE			δ V	BNA	Pest/ PCB	Herb	8			Metal	1831		SLIG		正	
MATRIX	j					Matrix					_	-,	,	Į.	7	Lionvill	e Lab	orate	ory Us	se Only	/	1		
CODES: S - Soil SE - Sediment SO - Solid SL - Sludge	Lab ID	CI	lient IC/Desc	cription	-	OC Chosen (V)		latrix	Date Collected	Time i Collected		0625 H	0608 H	OHBEX	ORB			MACARTO	TCAMO		ISFD		12th	
W - Water	001	MOOL	10					5	5.130	30900		×						У						
A - Air DS - Drum	002							1	7	0920		X	Х	X				X	X		Х			
Solids DL - Drum	500						\top		T	+		×	Χ_	X				Χ	Χ	<u> </u>	X			
Liquids	004	T					7		5 NO	0830		X						X						
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Special Instruct	ions:	SAF #	- Bo3	-015		DAT	E/REV	/ISION	S:											Lionvil	le Labo	ratory U	ise On	ly
		Matrix 9				 		3 4 5										1) Ha Air 2) 3) Co 4)	Shippe and Del bill # Ambier Received	were: ed in Grant or Charles in Grant or Charles or Cha	N N N N N N N N N N N N N N N N N N N	1) Pi Pack 2) Ui Pack 3) Pr 4) Ur Sam	resent kage inbroke kage resent nbroker	ntant Seal was on Outer on Outer on Outer on Sample on Sample or N n on or N
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George .	4	<u> </u>	5.17.02	1153	<u> </u>	יייס: אא		TR		EWRI		7		NOT	Record ES:	17 V 01(1-2-04	N)	Ho	Iding T		N	Coole Temp	er p. <u>O</u>	.3.° .3.°

Bechtel I	lanfor	d Inc.		CF	IAI	N OF CUST	ODY/S	<u>AMI</u>	LE	AN	AL'	Y 515							
Collector Fahlberg				Compa M St	nv C ankov		Telephor 531-76							oiect Coordin SSNER, JH	nator P	rice Code	8B	Data Tur	•
Project Designation Remaining Sites Cor	nfirmation	Sampling-Soil		Sampli 600-		ocation								F No. 3-015	A	ir Quality		/ D	ays
Ice Chest No.	C 9	6039		Field I EL1		ok No.		CO/ C17F	A ŁXU67	1C				thod of Ship Fed EX					
Shipped To TM (RECRA				Offsite	Prop	perty No.	300	23,	/				Bi	ll of Lading/	Air Bill No	Sele	OSP (<u>^</u>	
POSSIBLE SAMPL	E HAZAI	RDS/REMARKS					I					1					1		
Non-Rad Area, No Ac	tivity Rep	ort Required		Ì		Preservation	None	C00	14C	Ca	014C								
Special Handling a	nd/or Si	torage			Ту	pe of Container	aG	<u> </u>	G		aG /	<u> </u>				<u> </u>	<u> </u>		
Special transming		C00 4°C			No.	of Container(s)	1	!	l '						'				
	•	C00 1 -		!		Volume	60mL	120	mL .	6	Omi				 				
		SAMPLE ANAL	.ysis				See item (1) in Special Instructions,		VOA - (TCL)	10 NOV	5.13.00			ŕ					
Sample No.		Matrix *	Samp	le Date		Sample Time				.,,		8			14 45 E				W-\$25
JOONEO		SOIL	5.1	3.0	V	0900	×	<u> </u> x		4		<u> </u>				ļ		<u> </u>	
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						- <u>-</u>	 			+		├		 		 		 	
								 		-		 					 -	 	
CHAIN OF PO	SSESSIO	l N	L Si	ign/Pria	t Nam	nes	L	┸	SPEC	IAL	INST	RUCTI	ONS	<u> </u>	L		<u></u>	<u> </u>	Matrix *
Relinquished By/Removed	l From	Date/Time 143	Receive	d By/Stor	ed In	Da	ite/Time 14.		(1) 10	Р Мо		10TR (C		List) (Arsenic, !	Barium, Cadi	nium, Chromiu	ın, Lead, Selen	ium, Silver);	S=Soil SE=Sediment
Relinquished By/Removed	From	51603)) 00		ed By/Stor OALC		W- 5160	ite/Time	00			,	,							SO=Solid SI=Sludge W = Water O=Oil
Relinquished By/Remove	From	Date/Time 603 1(00		ed By/Stor	E-	\	ite/Time												A=Air DS=Drum Solids DL=Drum Liquids
Relinquished By/Removed	1 From	Date/Time	Receive	a aysa	ed Iv	JN 5176	nte/Time	-											T=Tissue W1=Wipe L=Liquid
Relinquished By/Removed		Date/Time	Receive	ed By/Stor	ed In	Da	te/Time		Г	eling	juish s	ot avail amples	from	the 3728					V=Vegetation X=Other
Relinquished By/Removed	d From	Date/Time	Receive	ed By/Stor	ed In	Da	te/Time		 	lef#	:5A	on <u>.5</u>	<u> </u>	6.103					
LABORATORY SECTION	Received By	· · · · · · · · · · · · · · · · · · ·					Ti	tle									I	Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Mo	ethod					 _				Disp	osed By						Date/Time	
																			

Bechtel Hanfor		CHAIN OF CUSTOD I/SAMP LE ANALTSIS REQUEST							Page 1	01 1						
Collector Fahlberg			npany (I Stanke		Telephor 531-76						roiect Coordin	ator F	rice Code	8B	Data Tur	· · · · · ·]
Protect Designation Remaining Sites Confirmatio	n Sampling-Soil		oling 1 00-139	Location							AF No. 03-015	A	ir Quality		7 10	aye
Ice Chest No. ERC	8 6 039		d Logb L1577	ook No.		COA C17HX	KU67	ıc			ethod of Ship Fed EX	ment 				
Shipped To TM_(/RECRA)		Off	site Pro	DEERTY No. AC	302	31	<u>:</u>		,	В	ill of Lading/	Air Bill No	SEE	057	, <u> </u>	
POSSIBLE SAMPLE HAZA	RDS/REMARKS		1			}	_	0.140			/		}			
Non-Rad Area, No Activity Rej	port Required			Preservation	None	Cool 40	c	Cool 4C	Co	301 4C	Cool 4C	Cool 4C				
Special Handling and/or S	Storage		T	ype of Container	aG	aG		aG		aG ∫	aG	aG				
•	4		No	o. of Container(s)	l 	l		1		1	1	1 	<u> </u>		<u> </u>	
	•	-		Volume	1m06	240mL	L	120mL	6	Omil	120mL	120mL				
	SAMPLE ANALYSIS Sample No. Matrix * Sample Date Sample					PCBs - 80 Peszicides 8081; Chk Herbicide EPA815	lora -	Semi-VOA - 8270A (TCL)	VOAC	\$ 1.70		Total Cyanide - 901				
Sample No.	Matrix *	Sample Da	te	Sample Time	1. 经总额		\$ j.		\$ A	\$		ورند به این است. چهره این در در			the form	1-15-150
J00NK7	SOIL	5-13-	03	0920		X		λ	4		X	X				
J00NK8	SOIL	5 . 13 -	03	0920	×				1_		×	X		<u></u>		
							_		1_				 	 		
									<u>L</u>						ļ	
						<u> </u>			1					<u> </u>	<u> </u>	
CHAIN OF POSSESSIO		Sign/Pr			te/Time 14		PECI	AL INSTR	UCT	IONS	3					Matrix *
Relinquished By/Removed From K. F. 200 R. F. 614	Date/Time 143,	Received By/S	3 7		3.0 >	(1		P Metals - 601 y - 7471 - (CV		(Client	List) {Arsenic, l	Barium, Cadi	mium, Chromiun	ı, Lead, Seleni	un, Silver);	S=Soil SE=Sedimeni
Relinguished By/Removed From 3728	Date/Time	Received By/S	tored in	. Da	te/Time		ATER CITI	y - 1411 - (C	•,							SO-Solid Si-Sludge W = Water O-Oil
Relinquished By/Removed From 216ALE A July 5	Date/Time	Received By/S	tored In	Da	te/Time											A=Air DS=Drum Solids DL=Drum Liquids
Relinquished By/Removed From	Date Time	Received B(/S	toned in	Da ことう 5.17	te/Time			D							:	T=Tissue WI=Wipe L=Liquid
Relinquished By/Removed From	17.03 11.55 Date/Time	Received By/S			te/Time	-		Personne relinquis Ref#	h sar	nples	lable to from the 372 11610	8			;	V=Vegetation X=Other
Relinquished By/Removed From	Date/Time	Received By/S	tored In	Da	te/Time			101 11	<u>~ </u>	"' <u></u> _	<u> </u>	2_			-	
LABORATORY Received B	у		<u> </u>		Tit	ic								D	ate/Time	
FINAL SAMPLE Disposal Method DISPOSITION							Dispos	sed B	y				I	ate/Time		
																

Bechtel Hanford Inc. CHAIN OF CUSTODY/SA					<u>E ANAL</u>	YSIS	REQUES	T	B03	-015-103	Page 1	or 1
Collector Doug Bowers	Comp	any Contact te Stankovich	Telephor 372-90	se No.			Proiect Coord KESSNER, JH	inator	Price Code	8B		rnaround
Project Designation Remaining Sites Confirmation Sampling-Soil		ling Location 1-181 oil dump area					SAF No. B03-015		Air Quality		/ L)ays 5
Ice Chest No. ERC 19 055		Logbook No. -1578		COA C17HXI	U671C		Method of Shi Fed Ex	pment				
Shipped To TMA/RECRA	Offsit	e Property No.	030	23.2	<u>, </u>	,	Bill of Ladins	/Air Bill !	No. SEE	-05f	2	·
POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	None	Cool 4C	Cool 4C							
Special Handling and/or Storage		Type of Container	aG l	aG 1	aG							
		No. of Container(s) Volume	60mL	120mL				 			 	
SAMPLE ANAL	YSIS	<u> </u>	See item (1) in Special Instructions.	Semi-VOA 8270A (TC	TL) (TØL)	JA						
Sample No. Matrix *	Sample Date	Sample Time	是《公司·美 《中华记录》	3		U	۰)			111		
J00NP0 SOIL	5-14-03	0830	Х	X	VX	7						
CHAIN OF POSSESSION Relinquished By/Removed From Date/Time Relinquished By/Removed From Date/Time Relinquished By/Removed From Date/Time Relinquished By/Removed From Date/Time Sofaction Date/Time	Received By/Stor	7 3 7 3 8 5 - 14 Da 10		Ø (1)	ercury - 7471 - (C	10TR (CI V)	ONS ient List) (Arsenic ~ U) P	_			n, Silver};	Matrix * S-Soti SE-Sediment SO-Solid Sir-Studge W - Water O-Oil A-Air DS-Drum Solids DL-Drum Liquids
Relinquished By/Removed From Date/Time Relinquished By/Removed From Date/Time	Received By/Stor	red In Da Da 5.17.0	to/Time B \\55 te/Time		Personnel not a elinquish camp on ef # 3 on	vailable des fron	e to n the 3728					T=Tissue Wi=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From Date/Time	Received By/Stor	red In Da	te/Tune		on # <u>writon</u>	/_	16103				,	
LABORATORY Received By SECTION			Tid	e e						Da	te/Time	
FINAL SAMPLE Disposal Method DISPOSITION					Dispo	sed By				Da	te/Tune	

Bechtel Hanford Inc.				CHA	IN	OF	CUST	ODY/S	AM]	PLE	ANALY	YSIS	RE	QUEST			B03	-015-102	Page 1	of 1
Collector Doug Bowers				ipanv like St				Telephor 372-90						iect Coordin SSNER, JH	nator	Price (Code	8B		rnarount
Project Designation Remaining Sites Confirmation	n Sampling-Soil			17 ling 100-18			area							F No. 3-015		Air Q	uality		7 I 	Days 🦳
Ice Chest No. ERC 99	9 055			d Log		No.			C0.	A HXU6	71C	1	F	thod of Shipi ied Ex						
Shipped To- TMA/RECRA			on	site Pr	opert	tv No.	A	030.	2	32			Bil	of Lading/	Air Bill	ار. ایک	E .	صور		
POSSIBLE SAMPLE HAZA	RDS/REMARKS				Pre	eserva	ıtion	None	Cox	ol 4C	Cool 4C	Cool 4		400						
Carried Handling and/or C	****			1	Type o	of Co	ntainer	aG	a	aG	aG	aG		26						
Special Handling and/or S	torage			ı	io, of	Cont	ainer(s)	1		ī	ì	1		1						
					,	Volun	ne	60mL	250	0mL	120mL	60ml	L	60 ml						
	SAMPLE ANALYSIS Sample No. Matrix * Sample Date							See item (1) in Special Instructions.	Pestic 8081; Herbi	- 8082; icider- Chloro- jesdes - A8151	Semi-VOA - 8270A (TCL)	VOA - 82 (TCL	.) I	T #14 (+ + + + 1) H18.]						
Sample No.	Matrix *	San	nple Da	te	: Sample Time			-1.38k		49 64	ene.	721 m		原数	ily fyr	5.750	*323			
JOONN7	SOIL		4-0		10	39		X		<u>×</u>	X	ļ						<u> </u>	 	
300N08	SOIL	5-1	7-	<u>و ۽</u>	10	<u>y</u>	00	X	-	<u> </u>	<u> </u>	├						 	 	
10 AD 7 - 14-03	SOIL -				-															
CHAIN OF POSSESSIO	N	L	Sign/P	rint N	a mes					SPEC	CIAL INSTR	UCTIO	NS		L — — -					Matrix *
	Date/Time 51603 11 00	Recei	(FA)	3 A Stored	37	1	5-14- D 5/6	ate/Time 07 //0			CP Metals - 60 ury - 7471 - (C		ient L	.ist) {Arsenic, {	Barium, C	`admium,	Chromiur	m, Lead, Selen	iium, Silver};	S=Soil SE=Sediment SO=Solid SI=Studge W = Water O=Oil A=Air
Relinquished By/Removed From		F	ved By/	<u> </u>	X			ate/Time												DS=Drum Solids DL=Drum Liquids T=Tissue
Relinquished By/Removed From			ved By				517	ate/Time 33 iじ		Pei	rsonnel not a	ıvailable	e to							WI=Wipe L=Liquid V=Vegetation
Relinquished By/Removed From	Date/Time		ved By/					ate/Time			inqui <u>s</u> h sam f#_ 37_ on	nles froi	m th	e 3728						X=Other
Relinquished By/Removed From	Date/Time	Recei	ved By/	Stored 1	n		ט	ate/Time	ĺ											ļ
LABORATORY Received By SECTION	1							Ti	tie									1	Date/Time	
FINAL SAMPLE Disposal Me DISPOSITION	ethod						-, -				Dispo	sed By	-						Date/Time	

Bechtel	Hanford Inc.			CHA	IN OF CUST	ODY/S.	<u>AMP</u>	<u>LE</u>	<u>ANAL</u>	<u>(S</u>					B03	3-015-99	Page 1	ot T
Collector Fahlberg				npany C I Stanko		Telephon 531-76							ct Coordin	P	rice Code	8B	Data Tur	\sim
Project Designation Remaining Sites Co	onfirmation Sampling-S	oil		opling L 00-139	ocation							SAF 1 B03-0		A	ir Quality		/ 10	ays
Ice Chest No. ER	C 96 0'	39	1	d Logb L1577	ook No.		COA C17H)		ıc				od of Ship i EX	ment				
Shipped To TMA(RECRA)	<u></u>		on	site Pro	perty No. AO	302	31					Bill c	of Lading/	Air Bill No.	550	03/	ے د	
	LE HAZARDS/REMA (ctivity Report Required				Preservation	None	Cool	4C	Cool 4C	C	Cool 40	: 1	Cool 4C	Cool 4C	Cool 4C			
Special Handling	and/or Storage			Ty	pe of Container	aG	aG		аG	_	aG	\prod	aG	aG	aG			
	०००।५०८			No	of Container(s) Volume	60mL	RIN5		1 3		1 60mi	-	60mL	1 120mL	1 120mL			
	SAMP	LE ANALYS	ıs	1_	v Olume	See item (1) in Special Instructions.	PCBs - B Pesticide 8081; Ch Herbicid EPA8;	1082; les - nloro- les -	Semi-VOA - B270A (TCL)		A - 816 (TCL)	OA T	PH (Total) - 418.1	Sulfides - 9030	Total Cyanide - 9010			
Sample No	. Matrix	*	Sample Da	le .	Sample Time	in the state of the			4 January 188		100		Live gree				74.5	
JOONK9	SOII		5-150	23	1200	X	X		X	4		-	X	X	<u>×</u>		 	
										1		\perp						
										-		4				<u> </u>		
CHAIN OF PO	DSSESSION		Sig n/P	int Nar	nes		S	PECI	AL INSTR	UC	Tion	—∟ NS					L	Matrix *
Relinquished By/Remove R-000 K Relinquished By/Remove R-F 3A	d From Date/Ti	6.03	Received By/	tored III	728 5-15 Da	te/Time 15 = te/Time	;		P Metals - 601 y - 7471 - (C'		R (Clie	nt Lis	t) (Arsenic, f	Barium, Cadii	nium, Chromiu	n, Lead, Seleni	um, Silver);	S=Solt SE=Sediment SO=Solid SI=Sludge W = Water O=Oll
	d From Date/Ti		Received By/	Stored In	Da	te/Tune												A=Air DS=Drum Solids DL=Drum Liquids T=Tissue
Refinquished By/Remove	od From Date/Ti 5-17 03 (mis	517	16/Time <u>13 55</u>		Ρe	rsonnel noi	. 01%	المداند	ام مم						WI-Wipe L=Liquid V=Veget#ion
Relinquished By/Remove	d From Date/Ti	ime	Received By	Stored In	Da	te/Time		ге	inouish san	nnle	es fro	m th	e 372 <u>8</u>					X=Other
Relinquished By/Remove	ed From Date/Ti	ine	Received By/	Stored In	Da	te/Time		Ke	(# <u>3</u> A0	n_	<u>.</u>	16	103		<u></u>			
LABORATORY SECTION	Received By					Titl	le	_									ate/Time	
FINAL SAMPLE DISPOSITION	Disposal Method								Dispos	sed F	Ву					I	Date/Time	
												-						

Bechtel Hanfo	C	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST B03-015-102 Page 1									of I			
Collector Doug Bowers			nanv Co ke Stank		Telephor 372-90				Project Coordin KESSNER, JH	ator F	Price Code	8B	Data Tur	
Project Designation Remaining Sites Confirmation	on Sampling-Soil		oling Loc 0-181 oi	cation I dump area					SAF No. B03-015	A	ir Quality		7 D	ays C
Ice Chest No.	99 055		Logboo 1578	sk No.		COA C17HX	U671C		Method of Ships Fed Ex	nent				
Shipped To TM ORECRA		Offsi	ite Prope	erty No. AC	30	237	2		Bill of Lading//	Air Bill No	" SEE	0070		
POSSIBLE SAMPLE HAZA	ARDS/REMARKS		P	reservation	None	Cool 4C		Cool	4C Y C					
Ci-l Hardling and/or	Stuunga.		Тур	e of Container	aG	aG	aG	aC	26					
Special Handling and/or S	Storage		No.	of Container(s)	l	1	1)					
				Volume	60mL	250mL	. 120mL	60л	1 60m1	•				
	SAMPLE ANAL	YSIS			See item (1) in Special Instructions.	PCBs - 808 Pesticides 8081; Chlo Herbicides EPA815	- 8270A (TCL ro- i -							
Sample No.	Matrix *	Sample Date	c	Sample Time					_				15. 14.5	5. 5 × ×
J00NNZ 4 19	SOIL													
JOONNS 5-14-03	SOIL		<u> </u>	<u> </u>				↓			 	 		
J00NN9	SOIL	5-17-	2/	1300	X'	_X_	<u> </u>	 	$-\mid X - \mid$	·	 	-	 	<u> </u>
				<u></u>	 	 -		-{ -				 	 	
GHAIN OF BOSSESSI	<u> </u>	C:/D-i	1		<u> </u>		South Neg	2000	ONE		<u> </u>	ــــــ	<u> </u>	Matrix *
Relinquished By/Removed From Relinquished By/	Date/Time 5 [603 100 Date/Time 5 [603 100 Date/Time 7:03 155 Date/Time Date/Time	Received By/S Received By/S	tored in tored in tored in tored in tored in	128 1-1 10 516	ate/Time sate/Time sate/Time sate/Time sate/Time		Personnel n	010TR (C 7471 - (C	Client List) {Arsenic, 'V')	Barium, Cad	dmium, Chromiu		ium,	S=Soil SE=Sediment SO=Solid SI=Shadge W = Water O=Oil A=Air DS=Drum Salids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
SECTION RECEIVED	<i></i>			·	<u> </u>	· -								
FINAL SAMPLE Disposal I	Method	**					Dis	posed By					Date/Time	

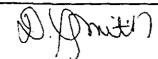
	LIONVILLE LABOR	RATORY I	NCORPOI	RATED	
	SAMPLE RE	CEIPT CH	ECKLIST		•
JEN.	r: TNU Hamford e Order/Project:			DATE:	5.17.03.
JF#1	SOW#/Release#: 803-015	 11			
	0305L43	2	1 200		<u> </u>
1.	ALL ENTRIES MARKED "NO" MUST BE E Custody seals on coolers or shipping container intact, signed and dated?	DYES	D No	DNA	□ see Comment #
2.	Outside of coolers or shipping containers are free from damage?	Yes .	□ No	D N/A	☐ see Comment #
3.	Airbill # recorded?	S Yes	□ No	D N/A	see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	(D)Yes	□ N ₀	D N/A	see Comment #
5.	Sample containers are intact?	D Yes	D No	D N/A	D see Comment #
6.	Custody seals on sample containers intact, signed and deted?	Yes	D No	D N/A	D see Comment #
7.	All samples on coc received?	/Ó Yes	□ No	□ N/A	□ see Comment #
8.	All sample label information matches coc?	Yes	□ No	D N/A·	□ see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	□ Yes	□ No	ANGE	See Comment #
10.	Shipment meets LvLl Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	D/Yes	□ No	DNA	□ see Comment #
11.	Where applicable, bar code labels are affixed to coc?	D Yes	□ No	ĎS N/A	🗀 see Comment #
12.	coc signed and dated?	Q Yes	□ No	D N/A	D see Comment #
13.	coc will be faxed or emailed to client?	MYes.	□ No	□ N/A	Sec Comment#
14.	Project Manager/Client contacted concerning discrepancies? (name/date)	□ Yes	. □ No	™ N/A	☐ sec Comment #

Cooler # / temp (°C) and Comments: ERC 99 055 / 0.8°

ERC 96039/0,3°C

Laboratory Sample Custodian:

Laboratory Project Manager:







Lionville Laboratory, Inc. PEST/PCB ANALYTICAL DATA PACKAGE FOR TNUHANFORD B03-015 H2224

DATE RECEIVED: 05/17/03

LVL LOT # :0305L450

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00NN9 J00NN9 J00NN9	004 004 MS 004 MSD	s s s	03LE0597 03LE0611 03LE0611	05/15/03 05/15/03 05/15/03	05/19/03 05/21/03 05/21/03	05/24/03 05/24/03 05/24/03
LAB QC:					ı	
PBLKUJ PBLKUK PBLKUK	MB1 MB1 BS MB1 MB1 BS	s s s	03LE0597 03LE0597 03LE0611 03LE0611	N/A N/A N/A N/A	05/19/03 05/19/03 05/21/03 05/21/03	05/23/03 05/23/03 05/24/03 05/24/03

gla 5/20/3



Analytical Report

W.O. #: 11343-606-001-9999-00

Date Relogged: 05-17-03

LVL #: 0305L450

SDG/SAF #: H2224/B03-015

Client: TNU-HANFORD B03-015

PESTICIDE

One (1) soil sample was collected on 05-14,15-03 and relogged from LVLI batch # 0305L432.

The sample and its associated QC samples were extracted on 05-19,21-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-23,24-03. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8081A.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 2. All required holding times for extraction and analysis have been met.
- 3. The sample and its associated QC samples received Florisil and Sulfur cleanups.
- 4. The method blanks were below the reporting limits for all target compounds.
- 5. Six (6) of eight (8) obtainable surrogate were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 6. Four (4) of twelve (12) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 7. Matrix spike recoveries were unobtainable due to the dilution required for analysis.
- 8. The sample and its matrix QC required 50-fold instrument dilutions due to the high concentrations of non-target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.
- 9. All initial calibrations associated with this data set were within acceptance criteria.
- 10. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 9 pages.

11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

pef\r:\group\data\pest\tnu hanford\05L-450.pes



Lionville Laboratory	Sample Discrepa	ancy Report (SDR SDR	#: <u>036c 154</u>
Initiator: Bruce Santara Date: 5127/03	Batch: <u>03<i>05(</i></u> Samples: <u>\$</u> \$	<u>431,432,450</u>	Parameter: _ Matrix;	0608H
Client: TOU	Method: SV846/MC	AVW/CLP/	_	03LEO547.06
	Profile Error Client Recription Error Wrong T	equest San Fest Code Oth	npler Error on C-O- er	c
b. General Discrepancy Missing Sample/Extract	Container Broken	Wrong Sam	pie Pulled L	ahel ID's Illegible
Hold Time Exceeded Improper Bottle Type	_ Insufficient Sample* _ Not Amenable to Analysi:	Preservations		Received Past Hold
Note*: Verified by [Log-In] or [Prep Group	-			
c. Problem (Include all relevant s			,	411 6
a High spike and	surrogate recove	unies in 15	(05LE0591,50	attached). Junited
2 High surrogate rec				
2. Known or Probable Causes(s)	Blacking	, clem.		•
·				
3. Discussion and Proposed Act Re-log	ion Other Desc	cription:		
Entire Batch				
Following Samples: Re-leach	<u></u>			
Re-extract Re-digest	\wedge			
Revise EDD				
Change Test Code to Place On/Take Off Hold (circl	<u> </u>	()		
4. Project Manager Instructions.		5/2/03		
Concur with Proposed Action		- ° 1-405		
Disagree with Proposed Action Include in Case Narrative				
Client Contacted:				
Date/Person				
Add Cancel				
5. Final Actionsignature/date:	16 1. K.O.	Other Explana	tion:	
Verified re-[log][leach][extract	digest][analysis] (circle)	Ourier Explaine	idott.	
Included in Case Narrative				
Hard Copy COC Revised Electronic COC Revised				
EDD Corrections Completed				•
When Final Action has been rec	orded, forward original to			···
Route Distribution of Completed	SDR		on of <u>Completed</u> SI	OR .
X Initiator , X Lab General Manager	M. Taylor		: Beegle nic: Perrone	
X Project Mgr: Stone/John	nson/Haşlett	GC/LC	: Kiger	
X Technical Mgr: Wessor	/Daniels		ychlak/Layman : Melnic	
XQA (file) Data Management: Fel	dman	Log-in		
Sample Prep: Beegle/k		Other:		
1			e .	



GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

- Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- Jacates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF PESTICIDE/PCB DATA

- P = This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- This flag applies to a compound that has been confirmed by GC/MS.

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Client: TNUHANFORD B03-015 H2224 Work Order: 11343606001 Page: 1 RFW Batch Number: 0305L450 PRIKTIK DRIKHLI RS DET.WILT PIMINO DT.

	Cust ID:	J00NN9		J00NN9		J00NN9		PBLKUJ	PBI	LKUJ BS	PBLKUK
Sample	RFW#:	004		004 MS		004 MSD		03LE0597-MB1	031	LE0597-MB1	03LE0611-MB1
Information	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	SOIL
	D.F.:	50.	0	50.	0	50.	0	1.00		1.00	1.00
	Units:	UG/K	.G	UG/K	G	UG/K	G	UG/KG		UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	D	8	D	४	D	४	115 %		130 * %	135 * %
-	Decachlorobiphenyl	D	8	D	% £1_	D	% _£1	135 * % 1		150 * % [f=====f]	160 * %
		=== === 95	:=I1=	======== 95	 	== ===== 95	U	1.7 t	. . – – - :	1.7 U	1.7 U
Alpha-BHC		95 95	Ū	95 95	U	95	U	1.7 (1.7 U	
Beta-BHC		95 95	IJ	95 95	ū	95	Ū	1.7 (1.7 U	
Delta-BHC	T	95 95	U	D	8	D	왕	1.7 (124 %	1.7 U
	Lindane)	95	บ	D	8	D	욷	1.7		128 * %	1.7 U
		95	U	D	*	D	ક	1.7		118 %	1.7 U
Aldrin	epoxide	95	U	95	U	95	IJ	1.7		1.7 U	1.7 U
Heptachior 6	eboxide	95 95	IJ	95	Ū	95	U	1.7		1.7 U	
	I	190	U	D	8 8	D	₹ 8	3.3		133 * %	
Dielarin		190	U	190	U	190	IJ	3.3		3.3 U	3.3 U
		190	Ü	D	8	D	8	3.3		148 * %	
Endrin	II	190	U	190	II	190	U	3.3		3.3 U	
	11	190	U	190	U	190	Ū	3.3	=	3.3 U	3.3 U
Endosulfan	sulfate	190	U	190	Ū	190	Ū	3.3	j	3.3 U	
4,4'-DDT	Bullace	190	U	D	8	D	٠ پ		- J	135 * %	3.3 U
Methoxychlo	r	950	U	950	Ū	950	Ū	17	J	17 U	17 U
Endrin keto	ne	190	Ū	190	Ū	190	U	3.3	J	3.3 U	3.3 U
Endrin alde	hyde	190	Ū	190	U	190	Ü	3.3	IJ	3.3 U	3.3 U
alpha-Chlore	dane	95	Ū	95	Ü	95	Ū	1.7		1.7 U	1.7 U
gamma-Chlor	dane	95	Ū	95	Ū	95	U	1.7	IJ	1.7 U	1.7 U
		9500	Ū	9500	Ū	9500	U	170	IJ	170 U	170 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Report Date: 05/27/03 15:33

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

RFW Batch Number: 0305L450 Client: TNUHANFORD B03-015 H2224 Work Order: 11343606001 Page: 2

Cust ID: PBLKUK BS

Sample RFW#: 03LE0611-MB1

Information Matrix: SOIL

D.F.: 1.00 Units: UG/KG

_	
Surrogate: Tetrachloro-m-xylene	90 %
Decachlorobiphenyl	125 * %
	======fl=======fl=======fl=======fl======
Alpha-BHC	1.7 U
Beta-BHC	1.7 U
Delta-BHC	1.7 U
gamma-BHC (Lindane)	102 %
Heptachlor	102 %
Aldrin	100 %
Heptachlor epoxide	1.7 U
Endosulfan I	1.7 U
Dieldrin	117 %
4,4'-DDE	3.3 U
Endrin	122 %
Endosulfan II	3.3 U
4,4'-DDD	3.3 U
Endosulfan sulfate	3.3 U
4,4'-DDT	105 %
Methoxychlor	17 U
Endrin ketone	3.3 U
Endrin aldehyde	3.3 U
alpha-Chlordane	1.7 U
gamma-Chlordane	1.7 U
Toxaphene	170 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

J85 70152

Report Date: 05/27/03 15:33

Lionville	Laboratory	Use	Only

Custody Transfer	Record/Lab	Work	Request	Page of
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D	VLIS
	LIONVILLE LABORATORY INC.

0305L450 FIELD PERSONNEL: Co							OMP	MPLETE ONLY SHADED AREAS A B									D	, 		G	LIONVILLE LABORATORY INC.								
	TAH	1- Haufe	Africa 303-015					Retrigerator #				\prod	2	$\cdot $							<u> </u>								
Client						#/Type Container			Liqui	d															[
Est. Final Proj. Sampling Date Project # (13 43 - 60 6 - 001 - 999 9 - 00									Solid	1	I.A	4	IAG	_		<u></u>		(AG	TA	<u></u>	IAG								
								Liqui	d						<u> </u>				<u> </u>										
Project Contact/Phone #						Volume			Solic	1	12	ο	250	<u> </u>				60	L	<u> </u>	60								
CC SPCC Del STD TAT 7 days						Pres	serva	tives			-								<u> </u>	<u> </u>									
W Del INI Dref					ANALYSES				_ }_		ORGANIC			-		·		DRG		T		İ							
Date Rec'd						REQUESTED				► 00 × 00 × 00 × 00 × 00 × 00 × 00 × 00	N A	50	Pest/ PCB	Herb				Metal	ਠ		4								
MATRIX							Matrix								Lionville Laboratory									Use Only					
CODES:	Lab ID	Client ID/Description					QC Chosen (✔)		Matrix		Date Collected	Time Collected			OLOGH	0608 H	OHERY	Pc 8 :			MRURATO			AH.C.					
SO - Solid SL - Sludge	<u> </u>	<u> </u>				MS	MSD				<u> </u>	4_	4	5	0	0	0		 -	<u> </u>	-		H						
W - Water O - Oil	041	700	NPO				<u>L</u> _		S		5-14-03	083.	2	7	<u> </u>				 		X	↓	 			<u> </u>			
A - Air DS - Drum	002	100	JOONN7								090	_ ا	;	<u>X</u>			X	<u> </u>	<u> </u>	X	<u> </u>	<u> </u>	ļ						
Solids DL - Drum	600}	10	BUNCO)]	L	1	1_		Х			X	<u>L</u> _		X	<u> </u>	<u> </u>						
Liquids	044		TOONNA						\prod	5-15-01	(300	2	1	4	X	X			l	*	l	<u> </u>	X		<u> </u>				
L - EP/TCLP Leachate		1										T	$\neg \vdash$																
WI - Wipe X - Other	ļ ·	1											$\neg \vdash$							1		T -							
F- Fish	<u> </u>	 						1				1										\top							
}	<u> </u>	 					1-	 	1	-		 		\top					1-	1		†	 			1			
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Special Instruct	l			2020			Ь	DATE	/REVI	SION	S:	ــــــــــــــــــــــــــــــــــــــ		_ !			 .	<u> </u>	1	<u> </u>	┶┌╴	 _	Lionvi	ile Lab	ratory	ilse O	lnlv		
5.2							<u>S-2</u>	2.03	1 1 3 3	O Pcis	1 0601	aire i	olla	Gr×	-00	rs.f	-00 3 Ficum	+ -0 	lume	_ 1 ⊢	Samples were: Tamper Resistant Seal 1) Shipped or 1) Present on Oute Hand Delivered Package Y or Airbill # 2) Unbroken on Oute						iter N		
Rulos of 0305 L 432 - 004, -005, -004, -008								4								1		ent or C		Package Y or N 3) Present on Sample									
									5										ived in (n Y d		Y or N								
								6						4) Samples							4) Unbroken on Sample Y or N								
Relinquished	d	Receive	ed	Date	Time	Re	elinqu by				Received by	<u> </u>	Date	T	Tin	ne		Discrepancies Between Samples Labels and						or N	C	COC Record Prese Upon Sample Rec'			
Rulos														1			co		rd? Y			o) Hece Holding		thin or N		ooler emp	Y 0	r N _ °C	
_	1											1					1												



DATE RECEIVED: 05/17/03 LVL LOT # :0305L450

CLIENT ID	LVL	# MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
	 					
J00 NN7	002	, S	03LE0597	05/14/03	05/19/03	05/24/03
J00NN8	003	S	03LE0597	05/14/03	05/19/03	05/24/03
J00NN9	004	S	03LE0597	05/15/03	05/19/03	05/27/03
J00NN9	004	MS S	03LE0611	05/15/03	05/21/03	05/24/03
J00NN9	004	MSD S	03LE0611	05/15/03	05/21/03	05/24/03
LAB QC:						
PBLKUJ	MB1	S	03LE0597	N/A	05/19/03	05/23/03
PBLKUJ	MB1	BS S	03LE0597	N/A	05/19/03	05/23/03
PBLKUK	MB1	S	03LE0611	N/A	05/21/03	05/24/03
PBLKUK	MB1	BS S	03LE0611	N/A	05/21/03	05/24/03

Jan 131/13



Analytical Report

W.O. #: 11343-606-001-9999-00

Date Relogged: 05-17-03

Client: TNU-HANFORD B03-015 LVL #: 0305L450

SDG/SAF #: H2224/B03-015

PCB

The set of samples consisted of three (3) soil samples collected on 05-14,15-03 and relogged from LVLI batch # 0305L432.

The samples and their associated QC samples were extracted on 05-19,21-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-23,24,27-03. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8082.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 2. All required holding times for extraction and analysis have been met.
- 3. All samples and their associated QC samples received Florisil, Sulfuric Acid, and Sulfur cleanups.
- 4. The method blanks were below the reporting limits for all target compounds.
- 5. Five (5) of eight (8) obtainable surrogate were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 6. All blank spike recoveries were within acceptance criteria.
- 7. Matrix spike recoveries were unobtainable due to the dilution required for analysis.
- 8. All samples required 50-fold instrument dilutions due to the high concentrations of non-target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.
- 9. All initial calibrations associated with this data set were within acceptance criteria.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 8 pages.

- 10. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
- 11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

pef\r:\group\data\pest\tnu hanford\05L-450.pcb



Lionville Laboratory	sample Discrepancy	kebou (20K) Si	DR #: <u>06C15/</u>
Initiator: Bryce Sutano	Batch: <u>/\$cst\$1,437,4</u> 4	11,450 Parameter:	spek
Date: 5/27/03	Samples: A5		Soil
Client: TUU	Method: 400846/MCAWW/CL	Prep Batch	1: <u>03160597</u>
1. Reason for SDR			
a. COC Discrepancy Tech Prof Transcript	ile Error Client Request	Sampler Error on C e Other	;-O-C
b. General Discrepancy	ion Endi violig rest cod	eOulei	
Missing Sample/Extract C	ontainer Broken	Wrong Sample Pulled	Label ID's Illegible
Hold Time Exceeded Ir	nsufficient Sample	Preservation Wrong	Received Past Hold
Improper Bottle Type N	ot Amenable to Analysis		
Note ² : Verified by [Log-In] or [Prep Group] (ci	rcle)signature/date:		
c. Problem (Include all relevant spec	cific results; attach data if neces	sary)	
(High surrocate recove	My in AS All colk	e diovantes a 1	·
@ High surrogate recove	A 12 Str	e releventes good.	
	•		
2. Known or Probable Causes(s)			•
			•
1			
3. Discussion and Proposed Action	Other Description:	11 //-	
Re-log		Normati	
Entire Batch			
Following Samples: Re-leach	_		
Re-extract			•
Re-digest	/ /		
Revise EDD Change Test Code to			
Place On/Take Off Hold (circle)		1	
4. Project Manager Instructionssig	inature/date: 1 / WA	- उतिहा	
Disagree with Proposed Action; Include in Case Narrative	See Instruction		
Client Contacted:			
Date/Person			
Add Cancel	1		
5. Final Actionsignature/date:		ther Explanation:	
Included in Case Nametive	gest[[arialysis] (circle)		
Hard Copy COC Revised			
Electronic COC Revised EDD Corrections Completed			
When Final Action has been record	led forward original to OA Si	necialist for distribution as	nd filing.
Route Distribution of Completed SD X Initiator	route	Metals: Beegle	i ODIV
X Lab General Manager: M.		Inorganic: Perrone	
X Project Mgr: Stone/Johnson	pn/Haslett	GC/LC: Kiger	
X Technical Mgr: Wesson/Da X QA (file)	aniels	MS: Rychlak/Layman Log-in: Melnic	
Data Management: Feldm	an —	Admin: Soos	
Sample Prep: Beegle/Kige		Other:	
¶			



GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF PESTICIDE/PCB DATA

- This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC/MS.

003

50.0

왐

UG/KG

SOIL

D

Sample

Information

Surrogate:

RFW#:

D.F.:

Units:

Decachlorobiphenvl

Matrix:

002

50.0

ક્ષ

UG/KG

SOIL

D

PCBs by GC

Report Date: 05/27/03 13:53 RFW Batch Number: 0305L450 Client: TNUHANFORD B03-015 H2224 Work Order: 11343606001 Page: 1 Cust ID: JOONN7 JOONN8 JOONN9 JOONN9 JOONN9 PBLKUJ

004

50.0

f

UG/KG

SOIL

D

004 MS

SOIL

D

50.0

왕

UG/KG

004 MSD

D

SOIL

50.0

કૃ

UG/KG

03LE0597-MB1

SOIL

1.00

UG/KG

130 * %

	=	-	-	_	•	_	•	_	•	_	•		•
	Tetrachloro-m-xylene	D	ક	D	*	D ·	8	D	8	D	४	105	ક
		========	=fl		=f1		=fl:		=f1=:		-fl-		=fl
Aroclor-1016	5	780	U	780	U	850	U	D	용	D	8	15	Ü
Aroclor-1221	L	_ 780	U	780	Ū	850	U	850	U	850	U	15	U
Aroclor-1232		_ 780	Ū	780	U	850	U	850	U	850	U	15	U
Aroclor-1242	<u></u>	_ 780	Ū	780	Ū	850	Ū	850	Ū	850	U	15	U
Aroclor-1248	3	_ 780	U	780	U	850	U	850	U	850	U	15	U
Aroclor-1254		_ 780	U	780	U	850	U	850	U	850	U	15	U
Aroclor-1260)	780	U	780	Ü	850	U	D	8	D	8	15	Ū
	Cust ID:	PBLKUJ BS		PBLKUK		PBLKUK BS				 .			
Sample	RFW#:	03LE0597-M	B1	03LE0611-N	ıB1	03LE0611-M	Œ1						
Information	Matrix:	SOIL		SOIL		SOIL							
	D.F.:	1.0	0	1.0	00	1.0	0						
	Units:	UG/K	G	UG/F	(G	UG/K	(G			•			
Surrogate:	Decachlorobiphenyl	155 *	8	155 *	. ક	135 *	8			<u></u>			
	Tetrachloro-m-xylene	120 *		115	*	90	ક						
							=f1	=========	=fl=	========	=fl=	========	=fl
Aroclor-1016		_ 115	%	15	Ū	89	왕						
Aroclor-1221		_ 15	U	15	U	15	U			-			
Aroclor-1232	2	_ 15	U	15	U	15	U						
Aroclor-1242	2	_ 15	U	15	U	15	U					1 1	Ø
Aroclor-1248	}	15	U	15	U	15	U					Albert Joseph	•
		_ 15	U	15	Ü	15	U					12K '	

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Lionville Laboratory Use Only

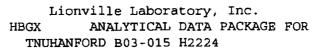
Custody Transfer Record/Lab Work Request Page _ of ___

U	IVLI
c 1	LIONVILLE LABORATORY INC.

03056450

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

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Client	TNU	- Harbord	B03 -0) (5			Retrige	rator #	Liquid	┼					-			+	+-		 		
Est. Final Pro	j. Samı	pling Date					#/Type	Container	Solid	 	146	IAG				11	6 FA		IAC	 			
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Project Conta	ct/Pho	ne #				 '	Volume	•	Solid	├	120	250				-+-	-	\dashv	60	 	 		
	_	Project Manager		02			Preser		5010	┼		13.0	-			- `	-	+-	+	+			
ac spec		Del STD	TAT	7 day	1		Preser	Valives		┼	ORG	ANIC	<u> </u>				NORG	_		+	1		$\vdash \dashv$
Date Rec'd	5.1	7-03 0	ate Due	5-24	-0>		ANALY REQUE		-	VOV VOV	BNA	Pest/ PCB	Herb				N C		E				
} -					 -	trix	 	T		 		L	1	L	Lionville			Use O	nly	1			
MATRIX CODES: S - Soil SE - Sediment SO - Solid	Lab ID	Clies	nt ID/Descri	ption	Cho	C sen /)	Matrix	Date Collected	Time Collecter		drss H	0608H	OHERY	OPCB .			MRURATO		1AC			:	
SL - Sludge W - Water	001	TOONPO					S	5-14-03	C (80)		X		-				(}
O - Oil A - Air	002	JOONN7					1	1	0904		X			X			X			T			
DS - Drum Solids	(00)	TOONNE	<u> </u>						1	1-	*			X			X			1		<u> </u>	
DL - Drum Liquids	002	 				_	1	5-15-03	1300	1	*	X	X				4		X	 			1
L - EP/TCLP Leachate	044	3 00 10 10 3				 		13.307		 -	 	-	 ~	1				+-	+	 -	+	<u> </u>	
Wt - Wipe X - Other	 . 	 				-	┼	 	 	╂	 	 	 	 -	 - 			+		┪ ┈	+	 	-
F - Fish	 -	 				 	}	 	 	+-	├-	├	├─-	 		-+			 	╅	+	 	\vdash
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Special Instruct	tions:	SAF #	803-0	15		5.2	/REVISIO 2 - 0 1	. 0 PcB	f0au	ve l	Ç,	-0<) Z	-003	t -00	4		Lior	ville Lai	borator	/ Use O	nly	
	Run	Matrix ac	(10 .	of nu -00	1)		<u>1</u>	Conce	1 0608	 10	HB& >	-	Eug.	Ficun	V √ (,	u Me	1) Shi	es were pped — Delivere		1)	amper Res) Present ackage	nt on Ou	uter
}							اد	3		·, ·								#		2) Unbrok	ken on	Outer
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ا کریک ر	-			•													. •	ceived in		3	, riesen	Yo	•
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Relinquished by	a	Received by	Date	Time	Relinqui by	shed	ł	Received by	1	Date	Ti	me			ies Betwe abels and				or N		Jpon Sar	mple R	ec't
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140,45	-		<u> </u>	 }	<u></u>		_				+-		NO	TES:					or N		emp		_ °C



DATE RECEIVED: 05/17/03

LVL LOT # :0305L45657750

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	. ANALYSIS
J00 NN 9	004	s	03LE0600	05/15/03	05/21/03	05/24/03
J00NN9	004 MS	S	03LE0600	05/15/03	05/21/03	05/24/03
J00NN9	004 MSD	S	03FE0600	05/15/03	05/21/03	05/24/03
LAB QC:						
PBLKUL PBLKUL	MB1 MB1 BS	s s	03LE0600 03LE0600	N/A N/A	05/21/03 05/21/03	05/23/03 05/27/03

ger J-sks



Analytical Report

W.O.#: 11343-606-001-9999-00

Date Received: 05-17-03

Client: TNU HANFORD B03-015

LVL#: 0305L450

SDG/SAF#: H2224/B03-015

HERBICIDE

One (1) soil sample was collected on 05-15-03.

The sample and its associated QC samples were extracted on 05-21-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-23,24,27-03. The extraction and analysis procedure was based on method 8151A.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from samples that met LVLI's sample acceptance policy.
- 2. All required holding times for extraction and analysis have been met.
- 3. The method blank was below the reporting limits for all target compounds.
- 4. All obtainable surrogate recoveries were within acceptance criteria.
- 5. One (1) of eight (8) blank spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- Matrix spike recoveries were unobtainable due to the dilution required for analysis.
- 7. The sample and its matrix QC required 50-fold instrument dilutions due the high concentrations of non-target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.
- 8. All initial calibrations associated with this data set were within acceptance criteria.
- 9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
- 10. To the best of my knowledge, this data report is in compliance with the terms and conditions of the purchase order, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hard copy data package and in the electronic data submitted on diskette has been authorized by the cognizant laboratory manager or his/her designee to be accurate as verified by the following signature.

Iain Daniels

Łaboratory Manager

Lionville Laboratory Incorporated

pef\7somr:\group\data\herb\\tnu\05L-450.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 7 pages.

Lionville Laboratory Sa	imple Discrepancy Report (SDR#: OSC 15 3
Initiator: Bryte Santaro Date: 512763 Client: DV	Batch: _03os2_431,432,450 Samples:&S Method: sv@46McAWW/cLP/	Parameter: olive(-x
1. Reason for SDR a. COC Discrepancy Tech Profile Transcription b. General Discrepancy Missing Sample/Extract Con Hold Time Exceeded Inst Improper Bottle Type Not Note*: Verified by [Log-In] or [Prep Group] (circle c. Problem (Include all relevant specific C. Low Dicamba Accovery Samples int Can of	Ifficient Sample Preservation Amenable to Analysis a)signature/date: c results: attach data if necessary)	nple Pulled Label ID's Illegible on Wrong Received Past Hold
2. Known or Probable Causes(s)		•
3. Discussion and Proposed Action Re-log Entire Batch Following Samples: Re-leach Re-extract Re-digest Revise EDD Change Test Code to Place On/Take Off Hold (circle)	Other Description:	Le.
4. Project Manager Instructionssignat Concur with Proposed Action Disagree with Proposed Action; Se Include in Case Narrative Client Contacted: Date/Person Add Cancel	ee Instruction	(1(0))
5. Final Actionsignature/date: Verified re-[log][leach][extract][diges Included in Case Narrative Hard Copy COC Revised Electronic COC Revised EDD Corrections Completed When Final Action has been recorded	,,	
Route Distribution of Completed SDR X Initiator X Lab General Manager: M, Ta X Project Mgr: Stone/Johnson/r X Technical Mgr: Wesson/Danie X QA (file) Data Management: Feldman Sample Prep: Beegle/Kiger	Metal aylor Inorg Haslett GC/L ets Log-it Admi	on of <u>Completed</u> SDR s: Beegle anic: Perrone C: Kiger Rychlak/Layman n: Melnic n: Soos



GLOSSARY OF HERBICIDE DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF HERBICIDE DATA

- P = This flag is used for an Herbicide target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by HPLC.

Herbicides, Special List

RFW Batch Number: 0305L450 Client: TNUHANFORD B03-015 H2224 Work Order: 11343606001 Page: 1

	Cust ID:	JOONN9)	JOONN	9	J00NN	9	PBLKUL		PBLKUL BS			
Sample	RFW#:	004	ļ	004 M	s	004 MS	D	03LE0600-M	В1	03LE0600-	MB1	,	
Information	Matrix:	SOIL		SOIL		SOIL	ı	SOIL		SOIL	·		
	D.F.:	50.	. 0	50	.0	50	.0	1.0	0	1.	00		
	Units:	ug/k	g	ug/	kg	ug/	kg	ug/k	g	ug/	kg		
Surrogate:	DCAA	D	*	D	*	D	8	48	*	108	*		
=======================================			==f1==		==fl==		==fl		=£1		==f	1=======	===fl
Dalapon		9500	U	D	૪	D	૪	170	U	78	8	i	
Dicamba		3800	U	D	8	D	ક્ષ	67	U	43	* %	;	
Dichloroprop		9500	U	D	ક	D	૪	170	U	92	왐	;	
2,4-D		1900	U	D	*	D	¥	33	U	76	*	í	
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2,4,5-T		950	U	D	と	D	૪	17	U	86	8	ſ	
2,4-DB		9500	U	D	ક	D	8	170	U	93	8	s	
Dinoseb		950	U	D	ક	D	ક	17	U	89	8	5	
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ge 5/13/5

Report Date: 05/29/03 10:51

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Lionville Laboratory Use Only

Custody Transfer Record/Lab Work Request Page ___of___

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03051450

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

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SO - Solid SL - Sludge						MS	MSD	<u> </u>		 			1 5	5 c	2	<u> </u>	0			3	ļ	Ĺ <u> </u>	H	<u> </u>			
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DATE RECEIVED: 05/17/03 LVL LOT # :0305L450

CLIENT ID /ANALYSIS	LVL #	MTX — —	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00NP0						
SILVER, TOTAL	001	s	03L0278	05/14/03	05/21/03	05/28/03
ARSENIC, TOTAL	001	S	03L0278	05/14/03	05/21/03	05/28/03
BARIUM, TOTAL	001	S	03L0278	05/14/03	05/21/03	05/28/03
CADMIUM, TOTAL	001	S	03L0278	05/14/03	05/21/03	05/28/03
CHROMIUM, TOTAL	001	s	03L0278	05/14/03	05/21/03	05/28/03
MERCURY, TOTAL	001	s	03C0122	05/14/03	05/21/03	05/22/03
LEAD, TOTAL	001	s	03L0278	05/14/03	05/21/03	05/28/03
SELENIUM, TOTAL	001	S	03L0278	05/14/03	05/21/03	05/28/03
J00NN7						
SILVER, TOTAL	002	s	03L0278	05/14/03	05/21/03	05/28/03
SILVER, TOTAL	002 REP	s	03L0278	05/14/03	05/21/03	05/28/03
SILVER, TOTAL	002 MS	s	03L0278	05/14/03	05/21/03	05/28/03
ARSENIC, TOTAL	002	S	03L0278	05/14/03	05/21/03	05/28/03
ARSENIC, TOTAL	002 REP	S	03L0278	05/14/03	05/21/03	05/28/03
ARSENIC, TOTAL	002 MS	S	03L0278	05/14/03	05/21/03	05/28/03
BARIUM, TOTAL	002	S	03L0278	05/14/03	05/21/03	05/28/03
BARIUM, TOTAL	002 REP	S	03L0278	05/14/03	05/21/03	05/28/03
BARIUM, TOTAL	002 MS	S	03L0278	05/14/03	05/21/03	05/28/03
CADMIUM, TOTAL	002	S	03L0278	05/14/03	05/21/03	05/28/03
CADMIUM, TOTAL	002 REP	S	03L0278	05/14/03	05/21/03	05/28/03
CADMIUM, TOTAL	002 M S	S	03L0278	05/14/03	05/21/03	05/28/03
CHROMIUM, TOTAL	002	S	03L0278	05/14/03	05/21/03	05/28/03
CHROMIUM, TOTAL	002 REP	S	03L0278	05/14/03	05/21/03	05/28/03
CHROMIUM, TOTAL	002 MS	S	03L0278	05/14/03	05/21/03	05/28/03
MERCURY, TOTAL	002	S	03C0122	05/14/03	05/21/03	05/22/03
MERCURY, TOTAL	002 REP	S	03C0122	05/14/03	05/21/03	05/22/03
MERCURY, TOTAL	002 MS	S	03C0122	05/14/03	05/21/03	05/22/03
LEAD, TOTAL	002	S	03L0278	05/14/03	05/21/03	05/28/03
LEAD, TOTAL	002 REP	S	03L0278	05/14/03	05/21/03	05/28/03
LEAD, TOTAL	002 MS	S	03L0278	05/14/03	05/21/03	05/28/03
SELENIUM, TOTAL	002	S	03L0278	05/14/03	05/21/03	05/28/03
SELENIUM, TOTAL	002 REP	S	03L0278	05/14/03	05/21/03	05/28/03
SELENIUM, TOTAL	002 MS	S	03L0278	05/14/03	05/21/03	05/28/03

DATE RECEIVED: 05/17/03 LVL LOT # :0305L450

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSI
J00NN8						
SILVER, TOTAL	003	s	03L0278	05/14/03	05/21/03	05/28/0
ARSENIC, TOTAL	003	S	03L0278	05/14/03	05/21/03	05/28/0
BARIUM, TOTAL	003	S	03L0278	05/14/03	05/21/03	05/28/0
CADMIUM, TOTAL	003	S	03L0278	05/14/03	05/21/03	05/28/0
CHROMIUM, TOTAL	003	S	03L0278	05/14/03	05/21/03	05/28/0
MERCURY, TOTAL	003	S	03E0278	05/14/03	-	
-					05/21/03	05/22/0
LEAD, TOTAL	003	S	03L0278	05/14/03	05/21/03	05/28/0
SELENIUM, TOTAL	003	S	03L0278	05/14/03	05/21/03	05/28/0
J00NN9						
SILVER, TOTAL	004	s	03L0278	05/15/03	05/21/03	05/28/0
ARSENIC, TOTAL	004	S	03L0278	05/15/03	05/21/03	05/28/0
BARIUM, TOTAL	004	S	03L0278	05/15/03	05/21/03	05/28/0
CADMIUM, TOTAL	004	S	03L0278	05/15/03	05/21/03	05/28/0
CHROMIUM, TOTAL	004	s	03L0278	05/15/03	05/21/03	05/28/0
MERCURY, TOTAL	004	S	03C0122	05/15/03	05/21/03	05/22/0
LEAD, TOTAL	004	S	03L0278	05/15/03	05/21/03	05/28/0
SELENIUM, TOTAL	004	S	03L0278	05/15/03	05/21/03	05/28/0
B QC:						
SILVER LABORATORY	LC1 BS	c	03L0278	N/A	05/21/03	05/28/0
	MB1	S	03L0278	N/A N/A	05/21/03	05/28/0
SILVER, TOTAL		S				05/28/0
ARSENIC LABORATORY	LC1 BS	S	03L0278	N/A	05/21/03	
ARSENIC, TOTAL	MB1	S	03L0278	N/A	05/21/03	05/28/0
BARIUM LABORATORY	LC1 BS	S	03L0278	N/A	05/21/03	05/28/0
BARIUM, TOTAL	MB1	S	03L0278	N/A	05/21/03	05/28/0
CADMIUM LABORATORY	LC1 BS	S	03L0278	N/A	05/21/03	05/28/0
CADMIUM, TOTAL	MB1	S	03L0278	N/A	05/21/03	05/28/0
CHROMIUM LABORATORY	LC1 BS	S	0310278	N/A	05/21/03	05/28/0
CHROMIUM, TOTAL	MB1	S	03L0278	A\n	05/21/03	05/28/0
ADDOTEDU TADODAMODU	LC1 BS	S	03C0122	N/A	05/21/03	05/22/0
MERCURY LABORATORY						
MERCURY, TOTAL LEAD LABORATORY	MB1 LC1 BS	s s	03C0122 03L0278	N/A N/A	05/21/03 05/21/03	05/22/0 05/28/0

DATE RECEIVED: 05/17/03

LVL LOT # :0305L450

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
						
LEAD, TOTAL	MB1	s	03L0278	N/A	05/21/03	05/28/03
SELENIUM LABORATORY	LC1 BS	S	03L0278	N/A	05/21/03	05/28/03
SELENIUM, TOTAL	MB1	S	03L0278	N/A	05/21/03	05/28/03



Analytical Report

Client: TNU-HANFORD B03-015

LVL#: 0305L450

SDG/SAF#: H2224/B03-015

W.O.#: 11343-606-001-9999-00

Date Received: 05-17-03

METALS CASE NARRATIVE

1. This narrative covers the analysis of 1 solid sample.

2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary.

This is a relog of LVL batch# 0305L432-004, -005, -006, -008.

- 3. All analyses were performed within the required holding times.
- 4. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits.
- 6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
- 7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
- 8. All ICP Interference Check Standards were within control limits.
- 9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.
- 10. All matrix spike (MS) recoveries were within the 75-125% control limits. Refer to the Inorganics Accuracy Report.
- 11. The duplicate analysis for 1 analyte was outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of pages.

- 12. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
- 13. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

gmb/m05-450

05-30-03

Date



METALS METHOD GLOSSARY

T 144	methods are used as refer	rence for the digestic	on and analysis	of samples	contained within this
Leaching Proce	edure:13101311	1312Other:	· ·		
CLP Metals	Digestion and Analysis	Methods:ILM0	3.0 _II_M04	.0	
Metals Digestio	on Methods:3005A3 Other: _	3010A301530	020A <u>/</u> 3050B	3051	200.7SS17
	M	etals Analysis Me	ethods		
	SW846	EPA	CTD MTD	EPA OSWR	TIC A TEXT A B.C. A
A.)			STD MTD	OSWK	USATHAMA
Aluminum	6010B	_200.7			99
Antimony	6010B7041 ⁵	200.7204.2	2112D		99
Arsenic		200.7206.2	3113B		99
Barium	<u>√</u> 6010B	200.7			99
Beryllium	6010B	200.7		1.000	_99
Bismuth	6010B ¹ £010B	200.7 1		1620	99
Boron		200.7			99
Cadmium	<u>√</u> 6010B7131A ⁵ €010B	200.7213.2			_99
Calcium		200.7			_99
Chromium	∠6010B7191 ° 6010B	<u>200.7</u> <u>218.2</u>			SS17
Cobalt			,		99
Copper	6010B7211 ⁵	200.7220.2			99
Iron	/	200.7	2112D		99
Lead	<u>√6010B</u> _7421 ⁵	200.7239.2	3113B	1/20	99
Lithium	6010B7430 ⁴	200.7		1620	_99
Magnesium	_6010B	200.7 200.7			99
Manganese	 /				99
Mercury	- -	245.1 ² 245.5 ²			99
Molybdenum	6010B	200.7			_99
Nickel	6010B	200.7			99
Potassium	_6010B7610 4	200.7258.1 4			_99
Rare Earths	6010B ¹	200.7 1	21127	1620	99
Selenium	<u></u>	200.7270.2	3113B	1.500	99
Silicon	6010B'	200.7		1620	99
Silica	_6010B	200.7		1620	_99
Silver	∠6010B7761 °	200.7272.2			<u>_99</u>
Sodium	6010B7770 4	200.7273.1 4			99
Strontium	6010 B	200.7			99
Thallium	6010B7841 ⁵	200.7279.22	00.9		99
Tin	6010B	200.7			99
Titanium	6010B	200.7			99
Uranium	6010B ¹	200.7 ¹		1620	99
Vanadium	6010B	200.7			99
Zinc	6010B	200.7			99
Zirconium	6010B '	200.7 1		1620	99
Other:	Method	•		1.327.0	23.04.02.01

L-WI-033/M-03/01

6

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- * = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LCS = Laboratory Control Sample.

NC = Not calculated.

ANALYTICAL METAL METHODS

- 1. Not included in the method element list.
- 2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).
- 3. Flame AA.
- 4. Graphite Furnace AA.

L-WI-033/N-04/98

INORGANICS DATA SUMMARY REPORT 05/29/03

LVL LOT #: 0305L450

CLIENT: TNUHANFORD B03-015 H2224

					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
225555	*********			=====	EIE: # = = = # 2	
-001	JOONPO	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	0.31 u	MG/KG	0.31	1.0
		Barium, Total	1.2	MG/KG	0.02	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.28	MG/KG	0.09	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Lead, Total	0.56	MG/KG	0.21	1.0
		Selenium, Total	0.39 u	MG/KG	0.39	1.0
-002	JOONN7	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	2.3	MG/KG	0.33	1.0
		Barium, Total	83.2	MG/KG	0.02	1.0
		Cadmium, Total	0.10	MG/KG	0.04	1.0
		Chromium, Total	12.3	MG/KG	0.1	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	4.4	MG/KG	0.23	1.0
		Selenium, Total	0. 41 u	MG/KG	0.41	1.0
-003	300NN8	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	2.8	MG/KG	0.33	1.0
		Barium, Total	81.8	MG/KG	0.02	1.0
		Cadmium, Total	0.1	MG/KG	0.04	1.0
		Chromium, Total	13.0	MG/KG	0.10	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	4.6	MG/KG	0.23	1.0
		Selenium, Total	0.42 u	MG/KG	0.42	1.0
-004	J00NN9	Silver, Total	0.13 u	MG/KG	0.13	1.0
		Arsenic, Total	3.0	MG/KG	0.36	1.0
		Barium, Total	98.1	MG/KG	0.02	1.0
		Cadmium, Total	0.12	MG/KG	0.04	1.0
		Chromium, Total	14.6	MG/KG	0.11	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Lead, Total	4.5	MG/KG	0.25	1.0
		Selenium, Total	0.46 u	MG/KG	0.46	1.0

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/29/03

CLIENT: TNUHANFORD B03-015 H2224 LVL LOT #: 0305L450

					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
= # # # # # = #	****					# = = = = = = = = = = = = = = = = = = =
BLANK1	03L0278-MB1	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	0.33 u	MG/KG	0.33	1.0
		Barium, Total	0.05	MG/KG	0.02	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.20	MG/KG	0.10	1.0
		Lead, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.42 u	MG/KG	0.42	1.0
BLANK1	03C0122-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

INORGANICS ACCURACY REPORT 05/29/03

CLIENT: TNUHANFORD B03-015 H2224

LVL LOT #: 0305L450

			SPIKED	INITIAL	SPIKED		DILUTION
SAMPLE	SITE ID	ANALYTE	SAMPLE	RESULT	AMOUNT	*RECOV	FACTOR (SPK)
		第四元的基金的数字符码工程设备的数字符号包包	*****	*****			****
-002	J00NN7	Silver, Total	4.6	0.12u	5.0	92.0	1.0
		Arsenic, Total	183	2.3	199	91.1	1.0
		Barium, Total	265	83.2	199	91.5	1.0
		Cadmium, Total	4.7	0.10	5.0	92.0	1.0
		Chromium, Total	30,9	12.3	19.9	93.5	1.0
		Mercury, Total	0.17	0.02u	0.15	109.8	1.0
		Lead, Total	49.8	4.4	49.7	91.3	1.0
		Selenium, Total	174	0.41u	199	87.5	1.0

INORGANICS PRECISION REPORT 05/29/03

CLIENT: TNUHANFORD B03-015 H2224

LVL LOT #: 0305L450

			INITIAL			DILUTION
SAMPLE	SITE ID	ANALYTE	RBSULT	REPLICATE	RPD	FACTOR (REP)
======	Ex**===============		******		=======	
-002REP	JOONN7	Silver, Total	0.12u	0.12u	NC	1.0
		Arsenic, Total	2.3	2.6	12.2	1.0
		Barium, Total	83.2	80.0	3.9	1.0
		Cadmium, Total	0.10	0.14	34.0	1.0
		Chromium, Total	12.3	13.0	5.5	1.0
		Mercury, Total	0.02u	0.02u	NC	1.0
		Lead, Total	4.4	4.0	9.5	1.0
		Selenium, Total	0.41u	0.42u	NC	1.0

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/29/03

CLIENT: TNUHANFORD B03-015 H2224

LVL LOT #: 0305L450

WORK	ORDER:	11343-606-001-9999-0	00
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			SPIKED	SPIKED		
SAMPLE	SITE ID	ANALYTE	SAMPLE	AMOUNT	UNITS	*RECOV
****	****************			*****	======	*****
LCS1	03L0278-LC1	Silver, LCS	49.1	50.0	MG/KG	98.2
		Arsenic, LCS	909	1000	MG/KG	90.9
		Barium, LCS	487	500	MG/KG	97.3
		Cadmium, LCS	24.2	25.0	MG/KG	96.8
		Chromium, LCS	50.7	50.0	MG/KG	101.4
		Lead, LCS	239	250	MG/KG	95.6
	·	Selenium, LCS	852	1000	MG/KG	85.2
LCS1	03C0122-LC1	Mercury, LCS	6.8	6.2	MG/KG	109.8

Lionville Laboratory Use Only

Custody Transfer Record/Lab Work Request Page _ of _

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FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

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经通知的进行法定的		ling Date							Liquid												40			
Project #		(1243 - 606 - 6	0 (- 9 9 9	205			#/ Type	Container	Solid		146	146	\dashv				(AG	M		IAG				
	olect Contact/Phone #		Volume		Liquid						7													
		Project Manager		05	inde Tale		VOIUNA	' 	Solid		120	250	-1		- Topings		60			60		(1) 10 d 5		
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MATRIX					Matr								Ţ	1 2	Lionv	ille La	borat	ory Us	e Onl	у	1			
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LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

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10.00		

TNU Hanford

chase Order/Project:

DATE: 5 17.03

F# SOW#/Release #: 803-015

boratory SDG #:

borate	ory SDG #: \\305L43	32			
TE:	ALL ENTRIES MARKED "NO" MUST BE	EXPLAINED IN	THE COMM	ENT SECTION	
1.	Custody seals on coolers or shipping container intact, signed and dated?	SyYes	. D No	□ N/A	☐ sec Comment #
2.	Outside of coolers or shipping containers are free from damage?	Yes	□ No	DINA	☐ see Comment #
3.	Airbill # recorded?	Yes :	D No	□ N/A	see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	VD Yes	□ No	□ N/A	□ see Comment #
5.	Sample containers are intact?	17 Yes	□ No	□ N/A	See Comment #
6.	Custody seals on sample containers intact, signed and dated?	Yes	D No.	D N/A	☐ see Comment #
7.	All samples on coc received?	∕Ó Yes	□ No	□ N/A	: D see Comment #
8.	All sample label information matches coc?	Yes	□ No	□ N/A·	☐ see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	DYes	□ No	DOWA	see Comment #
10.	Shipment meets Lvl. Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	15/Yes	□ No	D N/A	☐ sec Comment #
11.	Where applicable, bar code labels are affixed to coc?	□ Yes	□ N ₀	DEFINA	□ sec Comment #
12.	coc signed and dated?	70Yes	□ No	□ N/A	see Comment #
13.	coc will be faxed or emailed to client?	T Yes	□ No	DNA	set Comment #
14.	Project Manager/Client contacted concerning discrepancies? (name/date)	□ Yes	□ No	NA	See Comment #

Cooler #/temp (°C) and Comments:

ERC 99 055/0.8°-

ERC 96 039/0,3°C

Laboratory Sample Custodian:

Laboratory Project Manager:



DATE RECEIVED: 05/1	7/03	LVL LOT # :0305L450					
CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS	
							
J00NP0							
% SOLIDS	001	s	03L%S068	05/14/03	05/20/03	05/21/03	
J00NN7							
% SOLIDS	002	s	03L%S068	05/14/03	05/20/03	05/21/03	
J00 NN 8							
% SOLIDS	003	S	03L%S068	05/14/03	05/20/03	05/21/03	
J00 NN 9							
* SOLIDS	004	S	03L%S068	05/15/03	05/20/03	05/21/03	
PETROLEUM HYDROCARBO PETROLEUM HYDROCARBO	004 004 MS	S S	03LHC029 03LHC026	05/15/03 05/15/03	05/28/03 05/23/03	05/29/03 05/27/03	
PETROLEUM HYDROCARBO	004 MSD	S	03LHC026	05/15/03	05/23/03	05/27/03	
LAB QC:							
PETROLEUM HYDROCARBO	LC1 BS	s	03LHC029	N/A	05/28/03	05/29/03	
PETROLEUM HYDROCARBO PETROLEUM HYDROCARBO	MB1 LC1 BS	s s	03LHC029 03LHC026	N/A N/A	05/28/03 05/23/03	05/29/03 05/27/03	
PETROLEUM HYDROCARBO	MB1	S	03LHC026	N/A	05/23/03	05/27/03	



Analytical Report

Client: TNU-HANFORD B03-015 H2224

W.O.#: 11343-606-001-9999-00

LVL#: 0305L450

Date Received: 05-17-03

6/2/03

INORGANIC NARRATIVE

1. This narrative covers the analyses of 4 soil samples.

- 2. The samples were prepared and analyzed in accordance with the methods checked on the attached glossary.
- 3. Sample holding times as required by the method and/or contract were met.
- 4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 5. The method blank (MB) 03LHC029-MB1 for Petroleum Hydrocarbons (PHC) was within the method criteria however MB 03LHC026-MB1 was above the reporting limit.
- 6. The Laboratory Control Samples (LCS) for PHC were within the laboratory control limits.
- 7. The matrix spike recoveries for PHC were within the 75-125% control limits. The matrix spike duplicate was within the 20% Relative Percent Difference (RPD) control limit.
- 8. Results for solid samples are reported on a dry weight basis.
- 9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

njp\i05-450

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 16 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	<u>ASTM</u>	<u>SW846</u>	<u>OTHER</u>
% Ash	D2216-80		
% Moisture	D2216-80		ILMO4.0 (e)
% Solids	7 D2216-80		ILMO4.0 (e)
% Volatile Solids	D2216-80		_ IEMO 1.0 (c)
ASTM Extraction in Water	D3987-81/85		
BTU	D240-87		
CEC		9081	c
Chromium VI		- 3060A/7196A	_ `
Corrosivity by coupon by pH		1110(mod) 9045C	
Cyanide, Total		9010B	ILMO4.0 (e)
Cyanide, Reactive		Section 7.3/9014	
Halides, Extractable Organic		9020B	EPA 600/4/84-008
Halides, Total		9020B	EPA 600/4/84-008
EP Toxicity		1310A	_
Flash Point		1010	
Ignitability		1010	
Oil & Grease		9071A	
Carbon, Total Organic		9060	Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	D240-87(mod)	5050	
Petroleum Hydrocarbons, Total Rec	overable	 9071	EPA 418.1
pH, Soil		9045C	
Sulfide, Reactive		Section 7.3/9030B	
Sulfide		9030B(mod)	
Specific Gravity	D1429-76C/	D5057-90	
Sulfur, Total		9056	
Synthetic Preparation Leach		1312	
Paint Filter		9095A	
Other:	Method:		
Other:	Method		

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- * = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LC = Laboratory Control Sample.

NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

- 1. ASTM Standard Methods.
- USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
- 3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
- a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
- b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
- c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
- d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
- e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
- f. Code of Federal Regulations.

INORGANICS DATA SUMMARY REPORT 05/30/03

CLIENT: TNUHANFORD B03-015 H2224 WORK ORDER: 11343-606-001-9999-00 LVL LOT #: 0305L450

WORK ORDI					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
	*******	*******				
-001	JOONPO	% Solids	100	•	0.01	1.0
-002	JOONN7	% Solids	95.8	•	0.01	1.0
-003	JOONNS	% Solids	95.6	•	0.01	1.0
-004	J00NN9	* Solids	87.9	4	0.01	1.0
		Petroleum Hydrocarbons	7.6	MG/KG	3.8	1.0

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/30/03

CLIENT: TNUHANFORD B03-015 H2224

LVL LOT #: 0305L450

WORK	ORDER:	11343-606-001-9999-00
	OKDER:	TT343-000-00T-3333-00

HOIGH GREE	11313 010 011 0377				REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
			*****		*****	*****
BLANK10	03LHC029-MB1	Petroleum Hydrocarbons	3.3 u	MG/KG	3.3	1.0
BLANK10	03LHC026-MB1	Petroleum Hydrocarbons	4.6	MG/KG	3.3	1.0

INORGANICS ACCURACY REPORT 05/30/03

CLIENT: TNUHANFORD B03-015 H2224 WORK ORDER: 11343-606-001-9999-00

LCS10 03LHC026-LC1

LVL LOT #: 0305L450

3.3 u 140

103.2

1.0

			SPIKED	INITIAL	SPIKED		DILUTION
SAMPLE	SITE ID	ANALYTE	SAMPLE	RESULT	TRUOMA	*RECOV	Factor (SPK)
****	**********				2555E	*****	*******
-004	JOONN9	Petroleum Hydrocarbons	360	7.6	369	95.4	1.0
		Petroleum Hydrocarbons	343	7.6	367	91.6	1.0
LCS10	03LHC029-LC1	Petroleum Hydrocarbons	138	3.3 u	140	98.8	1.0

Petroleum Hydrocarbons 144

INORGANICS DUPLICATE SPIKE REPORT 05/30/03

CLIENT: TNUHANFORD B03-015 H2224 LVL LOT #: 0305L450

WORK ORDER: 11343-606-001-9999-00

SPIKB#1 SPIKB#2

SAMPLE	SITE ID	ANALYTE	*RECOV	*RECOV	*DIFF
*****				*****	*****
-004	JOONN9	Petroleum Hydrocarbons	95.4	91.6	4.1

Lionville	Laboratory	Use	Only

Custody Transfer Record/Lab Work Request Page _ of ___

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0305L450

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

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Est. Final Proj.							#/Tyne	Container	Liquid									<u> </u>		 -				
Project #	(1343 - 606.	- 001-	9999-00			w/13pc		Solid	<u> </u>	146	IAG	-				AG,	A		IAG	}			
Project Contact							Volume		Liquid	<u> </u>			 											
1 ,	Lionville Laboratory Project Manager								Solid	<u> </u>	120	250	-1				60			60				
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DL - Drum Liquids	<u>003</u>	TOONNO	<u> </u>	·	+-	╁─	 	5-15-03	1300	+	*	X	X	_		- †	*			X				
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Lionville Laboratory Use Only

Custody Transfer Record/Lab Work Request Page 1 of 1

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FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS



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Project #		(1343 - 606	6- 001	- 9999	-00						Solid	<u> </u>	146	IAG.					(AG	F		IAG				
Project Conta	ict/Ph	one #	<u> </u>					Volu	uma a		Liquid	<u> </u>														
	Lionville Laboratory Project Manager 0 중										Solid		170	30	1				60			60			·	L
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SO - Solid SL - Sludge		<u> </u>				MS	MSD	l]	<u> </u>	၂ ဝ	20	0				MR			17]		
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DL - Drum Liquids	004	 								5-15-03	1300		1	X	X				*			X				
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Special Instructi		SAF #	803-0	115															Sa	mples v				per Resis		was:
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by		by	Date	Time]	by				by		ara	<u> </u>		Sam	ies Lal	bels and	j	5) Received Within				Upon Sample Rec't Y or N			
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Bechtel	Hanfor	d Inc.		CHAIN OF CUSTOD 175AMI LE ANALTSIS REQUEST											Page 1	of 1			
Collector Doug Bowers					Contact Inkovich	Telephor 372-9						oiect Coord SSNER, JH	inator	Price Code 8B D			rnaround		
Project Designation Remaining Sites C	onfirmation	Sampling-Soil			Location oil dump area						3	F No. 3-015	A	Air Quality 🗌			Days		
Ice Chest No.	C 94	1 055		d Logb L-1578	oook No.		COA C17HD	17HXU671C Fed 1					fethod of Shipment Fed Ex						
Shipped To- TMA/RECKA		:	on	Offsite Property No. A03023						- -	Bil	Bill of Lading/Air Bill No. SEE OSP.							
POSSIBLE SAMP	LE HAZAF	RDS/REMARKS		1						Λ		}	}						
				1	Preservation	None	Cool 4	4C	Cool 4C	/		<u> </u>	<u> </u>	<u> </u>	<u> </u>				
Special Handling	andlor St	Orage		Т	ype of Container	aG	aG		aG					<u> </u>					
Special Handling	anwor St	oi age		No	o. of Container(s)	ì	1		1				ļ	<u> </u>	<u> </u>				
					Volume	60mL	120m	т	60mL			}	}						
		SAMPLE ANAI	Lysis			See item (1) in Special Instructions.	Semi-VC 8270A (T		(TGL)	*									
										JA									
Sample No).	Matrix *	Sample Da	te	Sample Time		A 1135		144			1.74.5	4.404	7 9 9			Service No.		
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CHAIN OF B	Secretion		Sign/P	int No.		<u> </u>	L-16	DECL	I Dior	DUCTI	ONIC	<u></u>	 	<u> </u>	<u> </u>		Matrix *		
CHAIN OF PO			Received By/	tored In	Da	te/Time/			AL INST	_							S=Soil		
Dong Bowers	Bower	55-4-63/1130	Ref 3		728 4-14	<u>~}///</u>			Metals - 6		lient L	ust) (Arsenic,	Barrum, Cadi	nium, Chromiui	n, Lead, Selenio	um, Silver};	SE=Sediment SO=Solid		
Relinquished By/Remove	ed From フタ √Jム	Date/Time	Received By/S	itored to	S1603	te/Time		r	·	4	L ,	150	For	01	100		SI=Studge W = Water		
Relinquished By/Remove SSGALEN		Date/Time 603 1100	Received By/			te/Time	·	Ĺ) 0	η ο ((4	() (101.	4.4.	/ a.c.	•	O-Oil A-Air DS-Drum Solids DL-Drum Liquids		
Relinquished By/Remove	ed From	Date/Time	Received Hy/	1) pr	JN 5.17.0	te/Time B 1155		Perco	nnol								T=Tissue W!=Wipe L=Liquid V=Vegetation		
Relinquished By/Remove		Date/Time	Received By	Stored In	Da	te/Time		relino	nnel not uish san	availabl ples fro	le to In the	3728 1 <u>03</u>					X=Other		
Relinquished By/Remove	ed From	Date/Time	Received By/	Stored In	Da	te/Time		101 17	<u></u> 01	1/	_16_	103							
LABORATORY SECTION	Received By		_ 			Tí	tie			 .			··		D	ate/Time	•		
FINAL SAMPLE DISPOSITION	Disposal Met	hod	· 			· · · · · · · · · · · · · · · · · · ·			Disp	oosed By					Ţ	Pate/Time			

Bechtel Hanfor	d Inc.		CI	IAI	ΝO	F CUST	ODY/S	AM	PLE	ANALY	YSIS	RI	EQUEST		B03	3-015-102	Page]	of 1
Collector Doug Bowers			Compa Mike		ontact kovic		Telepho 372-9						oiect Coordin SSNER, JH	nator P	rice Code	8B		rnaround
Project Designation Remaining Sites Confirmation	n Sampling-Soil		Sampli 600-			n oparea							F No. 3-015	A	ir Quality		7 i)ays
Ice Chest No. ERC 99	9 055		Field L EL-1		ok No),		C0 C17	A HXU6	71C		Method of Shipment Fed Ex						
Shipped To- TM (RECRA)			Offsite	Ргоп	erty i	No. Ac	030	2-	3Z			Bil	ll of Lading/	Air Bill No	5EE	ope		
POSSIBLE SAMPLE HAZA	RDS/REMARKS							T^-					1.					
			- }		Prese	rvation	None	Co	ool 4C	Cool 4C	Cool	4C	400		ł	}		
			. [Ту	pe of	Container	aG		aG	aG	aG	;	26					
Special Handling and/or S	torage		\$	No.	of Co	ontainer(s)	1	†	1	1	1		1					
· 			ĺ		Vo	lume	60mL	25	0mL	120mL	60m	L	60 m					
	SAMPLE ANAL	YSIS	1				See item (1) is Special Instructions.	Pesti 8081; Herb	i - 8082; icidey - ; Chloro- jicides - A8151	Semi-VOA - 8270A (TCL)	VOA - 8 (TCI		T +H (++++) H18.]				-	
Sample No.	Matrix *	Sample	Date		Sa	mple Time					1		400年4月	Fig. 14	36 (V)	and the		
J00NN7	SOIL	5-14-	03		_	900	X		χ	X			<u> </u>		<u> </u>	<u> </u>		
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JOONNO	-30IL		_				<u> </u>	ൎൎ					1			<u>.l</u>	<u> </u>	<u> </u>
10007-14-09								-					<u> </u>		}			
CHAIN OF POSSESSIO		Sia	n/Print	Nam			<u> </u>	ــــــــــــــــــــــــــــــــــــــ	SPEC	L	LCTIC	ONS	-l -		<u> </u>	<u> </u>	L	Matrix *
Relinquished By/Removed From D	49 Date/Time	Received	By/Stor	ed In		8 5-14-	ate/Time	70	(1) IO	CP Metals - 60	IOTR (C		List) (Arsenic, l	Barium, Cadn	nium, Chromit	ım, Lead, Seleni	um, Silver);	S-Soil SE-Sectiment
Relinquished By/Removed From REF 3A 3728	Date/Time 51603 11 00	Received S.J.G					ate/Time		Merci	ury - 7471 - (C'	v)							SO-Solid SI-Sludge W = Water O-Oil
Relinquished By/Removed From	Date/Time 1603 1100	Received	Do	<u>=</u> >	<u> </u>		ate/Time											A=Air DS=Drum Solids DL=Drum Liquids T=Tissue
Relinquished By/Removed From	Date/Time	Received	By/Star	by In	• سنون		ate/Time いろいり	5	D _D	rsonnel not a	vailabl	le to						Wi=Wipc L=Liquid V=Vegetation
Relinquished By/Removed From	Date/Time	Received	By/Stor	ed In		D	ate/Time		rel	inquish sam f # <u>37</u> 0n	ples fro	om th	ne 3728					X=Other
Relinquished By/Removed From	Date/Time	Received	By/Stor	ed In		D	ate/Time] Re	1 # <u></u> - OSI								
LABORATORY Received By SECTION	· · · · · · · · · · · · · · · · · · ·	_			-		Т	itle								E	Pate/Time	
FINAL SAMPLE Disposal M. DISPOSITION	ethod									Dispo	sed By					I	Date/Time	

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Fablerg	Bechtel	Hanfor	d Inc.	HAIN OF CUST	ODY/SA	MPL	E ANALY	<u>YSIS</u>	RI	EQUEST	<u>' </u>	R03	-ULD-YY	10. +		
Remaining Sites Confirmation Samplies Soil 600-139 Field Lobbook No. EL177 COA CITIOUSTIC Selbined Ja. COA CITIOUSTIC Selbined JASINGERA Office Procerty No. COA CITIOUSTIC Selbined JASINGERA Freservation Now Cod 45 Cod 45 Cod 45 Cod 45 Cod 45 Cod 45 Cod 46 Cod 46 Cod 46 Cod 46 Cod 46 Cod 46 Cod 47 Cod 46 Cod 47 Cod 46 Cod 47 Cod	Collector Fahlberg														-	
Silined James Code Code Code Code Code Code Code Code	Project Designation Remaining Sites C		s Sampling-Soil									Ai	r Quality		7 L	ays
POSSIBLE SAMPLE HAZARDS/REMARKS Non-Rad drea, No Activity Report Required Special Handling and/or Storage Type of Container No. of Cont	Ice Chest No.	C 91	6 039					U671C				ment				
Non-Rad Arta, No Activity Report Required Preservation Non-Rad Arta, No Activity Report Required Preservation Type of Container Secretary	Shipped To TMA(RECRA)			Offsit	e Property No. AC	302	31			Bil	ll of Lading/	Air Bill No.	500	03/	کے۔	
Special Handling and/or Storage No. of Container(s) No. of Container(s					Preservation	None	Cool 4C	Cool 4C	Cool	4C	Cool 4C	Coal 4C	Coal 4C			
No. of Container(s) Volume (on. 1. 2001. 2001. 120ml. 120m					Type of Container	 	aG			7	<u> </u>					
Sample No. Matrix * Sample Date Sample Time Sign/Print Names CHAIN OF POSSESSION (I) CIT MEATS 6010 PR (Client List) (Arsenic, Barium, Cadmium, Chromium, Lead, Scientium, Silver); Matrix Matri		المحص	t & C		 	60mL	240mL	6 43		+		<u> </u>	<u> </u>			
CHAIN OF POSSESSION Sign/Print Names SPECIAL INSTRUCTIONS			SAMPLE ANAL	ysis	1	See item (1) in Special	PCBs - \$08 Pesticides 8081; Chlor Herbicides	- 8270A (TCL)				Sulfides - 9030				
CHAIN OF POSSESSION Sign/Print Names SpeCIAL INSTRUCTIONS Special Instructions Date/Time 5	Sample No	o.	Matrix *	Sample Date	Sample Time		W E W			W.A.						
telinquished By/Removed From Date/Time JOONK9		SOIL	5-15.0	> 1220	X	X	X	7		X	X	×				
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telinquished By/Removed From Date/Time								/		 		 		 -		
FINAL SAMPLE Disposal Method	Relinquished By/Remov RELINGUISHED BY/REMOV Relinquished By/Remov SJ GALE Relinquished By/Remov Relinquished By/Remov Relinquished By/Remov Relinquished By/Remov	ate/Time orate/Time ste/Time ste/Time ate/Time	(1) Me) ICP Metals - 601 ercury - 7471 - (C ¹ Personnel not	10TR (CI V) -	ljent l	· 0	Barium, Cadır	iium, Chromiun			S=Soil SE=Sediment SO=Solid SI=Shedge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trum Wipe L=Liquidt V=Vegetation				
	FINAL SAMPLE	Disposal Me	ethod					Dispo	sed By					1	Date/Time	

Collector Doug Bowers Cannoar Contract Mice Standowich 372-9622 Remaining Sizes Confirmation Sampling Soil Samples Location 600-181 old utump are Soll Soll Soll Soll Soll Soll Soll Sol	Bechtel Hanfor	d Inc.	CI	HAI	N OF CUST	ODY/S	AMPL	E ANALY	YSIS	REQUEST		B03	-015-102	Page 1	of I
Remaining Size Confirmation Sampling-Sul	Collector		Comp	iny Co	ontact	Telephor	ie No.			Project Coordina	tor	Price Code	8B		į.
Sample No. Marrix Sample Date Sample Time Sample Date Sample	Project Designation Remaining Sites Confirmation	n Sampling-Soil	l l									Air Quality		7 D	ays
Preservation	Ice Chest No.	99 055	1		ok No.			671C		Fed Ex		·		_ 	
Special Handling and/or Storage Type of Container 40 40 40 40 40 40 40 4	Shipped To TM (RECRA		Offsite	Prop	ertv No.	30	232			Bill of Lading/A	ir Bitt N	10. SEE	-05PC	_	
Special Handling and/or Storage Type of Container(s) No. of Container(s) Volume See Service (special Handling and/or Storage Sample No. Doll Sample No. Matrix * Sample Date Sample No. Matrix * Sample No. Matrix * Sample Date Sample No. Matrix * Sample Date Sample No. Matrix * Sample Date Sample No. Matrix * Sample Date Sample No. Matrix * Sample Date Sample No. Matrix * Sample Date Sample No. Matrix * Sample Date Sample No. Matrix * Sample Date	POSSIBLE SAMPLE HAZA	RDS/REMARKS		ļ		}	}		Ì .			}	}		
Special Handling and/or Storage Type of Container(s) No. of Container(s) Volume Some sent (s) is 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					Preservation	None	Cool 4C	Cool 4C	Cool	" Y'C		<u> </u>	<u> </u>		
SAMPLE ANALYSIS Sample No. Matrix * Sample Date Sample Time Soul John No. Sedinguished by Removed From John John No. Sedinguished by Removed From Dute Time Received By Stored In Dute Time Soul John No. Soul John No. Soul John No. Sedinguished Soul No. Sedinguished By Removed From Dute Time Soul John No. Soul John No. Soul John No. Sedinguished By Removed From Dute Time Soul John No. Soul Joh		·		Tyi	pe of Container	#G	aG	aG	aC	' a6-					
Sample No. Matrix * Sample Date Sample Time Social Interactions Interactions Social Interactions Social Interactions Social Interactions Social Interactions Social Interactions Social Interactions Interactions	Special Handling and/or 5	otorage		No.	of Container(s)	ı	1	1	1						
SAMPLE ANALYSIS Secretary					Volume	60mL	250mL	120mL	60n	1 60m1		7			i
JONNS 5-14-07 SOIL JONNS 5-14-07 SOIL JONNS 5-14-07 SOIL JONNS 5-14-07 SOIL JONNS 5-14-07 SOIL JONNS 5-14-07 SOIL JONNS SOIL CHAIN OF POSSESION Relinquished By/Removed From Axy DaterTime Received By/Stored In Relinquished By/Removed From DaterTime Received By/Stored In DaterTime DaterTime DaterTime DaterTime Received By/Stored In DaterTime Dat		SAMPLE ANAL	YSIS	<u> </u>		Special	Pesticides - 8081; Chlore Herbicides -	8270A (TCL)		total					
JONN9 SOIL CHAIN OF POSSESSION Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Personnel not available to relinquish samples from the 3728 Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Personnel not available to relinquish samples from the 3728 Ref # Jon 5 / 6 / 6 / 6 / 6 / 6 / 6 / 6 / 6 / 6 /	Sample No.	Matrix *	Sample Date		Sample Time								<u> </u>		
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Relinquished By/Removed From Date/Time Received By/Stored In D		<u> </u>			<u></u>	<u> </u>			<u> </u>						
Relinquished By/Removed From Date/Time Received By/Stored In D							— SPI	ECIAL INSTI	RUCTI	ONS			•		l
State Stat	Relinquished By/Removed From RF 3A 3728	015 5-15-9/1430 Date/Time 51603 110	Received By/Sto		Dal 5160	5-43// ate/Time	Silv				arium, Ca	admium, Chromi	um, Lead, Seleni	um,	SE=Sediment SO=Solid SI=Sludge W = Water O=Oll A=Air
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Personnel not available to relinquish samples from the 3728 Ref # 2# on 5 1/6 / 63 LABORATORY SECTION Received By/Stored In Date/Time Personnel not available to relinquish samples from the 3728 Ref # 2# on 5 1/6 / 63 Date/Time Date/	STORIEN Jel	-51603 110	O FED	<u>e</u> >											DL=Drum Liquids
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Personnel not available to relinquish samples from the 3728 Ref # 2/F on 5 / (6 / 6 7) LABORATORY SECTION Received By Title Date/Time	Relinquished By/Removed From		Received By Su	Med In			55								WI=Wipc L=Liquid
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Ref #	Relinquished By/Removed From							Personnel no	t availa	ible to					
SECTION FINAL SAMPLE Disposal Method Disposed By Date/Time	Relinquished By/Removed From	Date/Time	Received By/Sto	ored in	D	ate/Time		Ref # 34	on <u>5</u>	16.103					
FINAL SAMPLE Disposal Method Disposal Method Disposed By Date/Time	LADORATORI I					Ti	itle	-					C	ate/Time	
	FINAL SAMPLE Disposal M	1ethod	<u>.</u>					Disp	osed By				1	Date/Time	

Lionville Labo	ratory U	se Only	Custody Tr	ansfer l	Rec	ord/L	.ab \	No	rk	Re	qu	es	t Page_	<u>1</u> _o	f	· į	Ö	V	11
030:	<u> 5 L4</u>	<u>32</u>	FIELD F	PERSONNEL: C	OMPLI	ETE ONL	Y SHAD	ED A	REA!	s ദ്ര.		C		D	E	•		HONVILLE LA	BORATORY INC.
Client T	NU-	Hendord	803-015		Refrige	rator #			2					F-					
Est, Final Pro	j. Samp	ling Date	·		#/Type	Container	Llquid												
Project #	<u>()</u>	343-606	001-9999-0	<u></u>	.,,,,,,		Solid		199	اعو	-1	lan		109	اعما		_مم	100	
Project Conta	ct/Phor	ne #			Volume	,	Liquid							_	<u>'</u>				
Lionville Lab	oratory	Project Manag	er Orlotte o	Xorran-			Solid		190	a 50	-1	350		60	190	1.	30 <u> </u>	60	
ac spece		Del 570	_ TAT_ Tolay	<u> </u>	Preserv	vatives		<u> </u>	ORG.	ANIC	<u> </u>	_		INC	DRG		<u></u>		
Date Rec'd _	5.17	<u> </u>	Date Due	4-0)	ANALY REQUE		-	VOA		Pest/	Herb	25			SN-1		S. Fab	臣	
MATRIX				Matrix							1		Lionville L	aborat	ory Us	e Only		1	
CODES: S - Soil SE - Sediment SO - Solid SL - Sludge	Lab ID	CI	lient ID/Description	QC Chosen (V)	Matrix	Date Collected	Time Collected		H 5790	0,68 H	OHBECK	oks		MRCANTO	TCANO		ISFD	IPHC	
W - Water	001	MOOL	LO		S	5 13 03	090)		X			_		×					
A - Air DS - Drum	003	100 N			1		9		X	Х	X			X	×		X		
Solids DL - Drum	600					1	7		X	Х	X	· · · ·		X	X		ΧL		
Liquids L - EP/TCLP	004	J60N	Po			5 MB	0830	_	×					×					
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W1 - Wipe X - Other F - Fish	006	· · · · · ·			\prod		L	_	X			X	Tim	X					
F • Fish	2007	200N			Π	51503	1220		X	X	X		141	X	X		X	X	
	00%	JOON	149		<u></u>	1	1300		X	X-	×			X		 -		_ X	
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						<u> </u>				<u> </u>				<u>1 </u>	<u> </u>				
Special Instruc	tions:	SAF #	= B03-015	DATE 5-2/	/REVISIO	NS: D. Jac	- day -	005 -	-00L	- an 8	40	03	02 5 420			Lionville	Labora	tory Use O	niy
f	lun	Matrix	QC (Do Not Us	(+004)		2. A44 3	04867	(fe	<u>~ 0</u>	07	-			- 1	amples) Shippe land Del irbill # _	were:	or 	1) Present Package 2) Unbrok	istant Seal was: ten Outer Y or N en on Outer Y or N
						4 5								3) Receiv	nt or Chill ved in Go	5đ	3) Present	on Sample or N
						6								4) Sampi	les		4) Unbrok Sample (
Relinquishe	d C	Received by	Date Time	Relinquished by)ditte	Received by	RIGI	-	Tin	ne	Sam	ples La	es Between abels and d? Y of N	. 5) Receiv	Preserved (Y) or ved Within	N	COC Reco Upon San	ord Present ople Rec't Y or N
Medica	1	Mmen	15.17.03 (153	WAS		<u> </u>	EWR	LIE	N _		NOT	ES:	93049		lolding 1	Y or	_	Cooler Temp. <u>C</u> 3-5014	<u>√. ⊃</u> •c

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

LIEN	T: TNU Hamford e Order/Project:			DATE	t: 5 17.03
\sim	0.50			וותע	9. 0 († 00)
AF	SOW# / Release #: 803-015	m 11		4	
	ory SDG#: <u>\\305L43</u> ;	2 and	0305	450,	ng 5-22-03
OTE:	ALL ENTRIES MARKED "NO" MUST BE E			ENT SECTION	
1.	Custody seals on coolers or shipping container intact, signed and dated?	DY es	D No .	D N/A	☐ see Comment #
2.	Outside of coolers or shipping containers are free from damage?	∑ Yes	□ No	□ N/A	see Comment #
3.	Airbill # recorded?	Yes :	□ No	□ N/A	See Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic	O Yes	□ No	D N/A	🖸 see Comment #
	bag and taped to inside lid)				
5.	Sample containers are intact?	D Yes	□ No	DNA	See Comment #
6.	Custody seals on sample containers intact, signed and dated?	Yes	□ No.	DNA	☐ see Comment #
7.	All samples on coc received?	∕Ó Yes	□ N ₀	□ N/A	□ see Comment #
8.	All sample label information matches coc?	Yes Yes	□ No	□ N/A·	sec Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	□ Yes	□ No	ANGE	see Comment #
10	. Shipment meets LvLl Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	19/Y.es	□ No	D N/A	see Comment #
11	. Where applicable, bar code labels are affixed to coc?	D Yes	□ No	DANA	see Comment #
12	. coc signed and dated?	Yes	□ No	DNA	See Comment #
13	. coc will be faxed or emailed to client?	Yes.	□ No	DN/A	Sec Comment #
14	. Project Manager/Client contacted concerning discrepancies? (name/date)	□ Yes	_ D No	MINA	see Comment #
E)	#/temp (°C) and Comments: &C 99 055 / 0.8 ° -				
ع	RC96039/0,3°C				
		i			

Laboratory Sample Custodian:

Ntin Q. Co

Laboratory Project Manager: